System No. <u>PT01</u> Document No. <u>PE-04-0001</u> Rev. <u>0</u>

The following table summarizes the Quality Level (QL) for each packaging component utilizing the guidelines presented in Table 5 for "Type B Fissile" from NUREG/CR-6407, Classification of Transportation Packaging and Dry Spent Fuel Storage System Components According to Importance to Safety. Quality Category Assessments (QCAs) follow the summary table.

NUREG/CR-6407 Definition			TRUPACT-II Safety Analys	TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V					
Function Component Type			Item Description	Drawing Reference	QL	Ref. Doc.	QCA		
			Cylindrical Shells	Sheet 3, Detail D	A	N/A	01		
			Upper Flanged and Dished Head	Sheet 6, Detail V	A	N/A	03		
			Lower Flanged and Dished Head	Sheet 3, Detail D	Α	N/A	03		
		ICV	Lifting Pocket Pipes	Sheet 5, Section AB-AB	Α	N/A	24		
	Shells and Heads		Lifting Pocket Bottom Plates	Sheet 5, Section AB-AB	A	N/A	24		
	Shells and Heads		Lifting Pocket Round Bars	Sheet 5, Section AC-AC	A	N/A	24		
			Lifting Pocket Doubler Plates	Sheet 5, Section AB-AB	A	N/A	24		
		OCV	Cylindrical And Conical Shells	Sheet 3, Detail C	Α	N/A	01		
			Upper Flanged and Dished Head	Sheet 6, Detail U	A	N/A	03		
			Lower Flanged and Dished Head	Sheet 3, Detail D	A	N/A	03		
		ICV	Upper Seal Flange	Sheet 6, Detail V	A	N/A	02		
Containment			Lower Seal Flange	Sheet 6, Detail V	A	N/A	02		
			Locking Ring	Sheet 6, Detail V	A	N/A	02		
			Lock Bolt Internal Thread Inserts (optional)	Sheet 3, Section F-F	A	N/A	21		
			Lock Bolt Weldments	Sheet 3, Section F-F	Α	N/A	21		
			Locking Ring Pins	Sheet 8, View Y-Y	A	N/A	21		
	Vessel Closure		Locking Ring Stop Plates (optional)	Sheet 8, Section AX-AX	С	N/A	28		
			Nickel Plating (optional)	Sheet 1, Flag Note 53	С	N/A	31		
			Upper Seal Flange	Sheet 6, Detail U	Α	N/A	02		
			Lower Seal Flange	Sheet 6, Detail U	A	N/A	02		
		OCV	Locking Ring	Sheet 6, Detail U	A	N/A	02		
			Locking Z-Flange	Sheet 2, Detail B	A	N/A	08		
			Lock Bolt Round Bars	Sheet 3, Detail E	A	N/A	21		

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NUREG/CF	R-6407 Definition		TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V				
Function Component Type			Item Description	Drawing Reference	QL	Ref. Doc.	QCA
			Lock Bolt Internal Thread Inserts	Sheet 3, Detail E	Α	N/A	21
			Lock Bolt Weldments	Sheet 3, Detail E	A	N/A	21
	Vessel Closure	OCV	Locking Ring Pins	Sheet 8, View AW-AW	Α	N/A	21
	vessei Ciosure	OCV	Locking Ring Pan Head Screws	Sheet 6, Detail U	A	N/A	21
			Locking Ring Stop Plates (optional)	Sheet 8, Section AY-AY	С	N/A	29
			Nickel Plating (optional)	Sheet 1, Flag Note 53	С	N/A	31
		ICV	Vent Port Insert	Sheet 4, Section J-J	A	N/A	22
Containment		IC V	Outer Vent Port Plug	Sheet 4, Section J-J	A	N/A	22
	Vent Port		Vent Port Coupling (Inboard)	Sheet 4, Section H-H	A	N/A	22
		OCV	Vent Port Fitting	Sheet 4, Section H-H	A	N/A	22
			Vent Port Plug	Sheet 4, Section H-H	A	N/A	22
	Seals	Seals OCV	Main O-ring Seal	Sheet 4, Section AK-AK	A	N/A	11
			Vent Port Plug O-ring Seal	Sheet 10, "ICV Outer Vent Port Plug"	A	N/A	11
			Main O-ring Seal	Sheet 4, Section G-G	Α	N/A	11
			Vent Port Plug O-ring Seal	Sheet 9, "OCV Vent Port Plug"	Α	N/A	11
			Ceramic Tape	Sheet 3, Detail AR	В	N/A	16
			Adhesive	Sheet 3, Detail AR	В	N/A	16
			Inner Thermal Shield	Sheet 2, Detail B	В	N/A	16
			Pop Rivets	Sheet 2, Detail B; Sheet 1, Flag Note 37	В	N/A	16
	Temperature		Fiberglass Insulation	Sheet 2, Detail B	В	N/A	16
Heat Transfer	Control	OCA	Lid Angle	Sheet 3, Detail E	В	N/A	16
114110141	Components		Body Angle	Sheet 3, Detail E	В	N/A	16
			Seal Test Port Foam or Ceramic Plug	Sheet 4, Section G-G	В	N/A	16
			Vent Port Foam or Ceramic Plug	Sheet 4, Section H-H	В	N/A	16
			Outer Thermal Shield	Sheet 2, Detail B	A	N/A	17
			Pipe Plugs	Sheet 5, Sections S-S & Z-Z	В	N/A	18

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NUREG/CR-6407 Definition			TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V				
Function Component Type		Item Description		Drawing Reference	QL	Ref. Doc.	QCA
			Spacer Brackets	Sheet 3, Detail D; Sheet 6, Detail V	C	N/A	09
			Spacer Facing Sheets	Sheet 6, Detail "SPACER"	В	N/A	10
			Spacer Honeycombs	Sheet 6, Detail "SPACER"	В	N/A	10
		ICV	Furane Adhesive	Sheet 6, Detail "SPACER"	С	N/A	31
	Dunnage		Flat/Round/Pan Head Screws	Sheet 3, Detail D; Sheet 6, Detail V	C	N/A	28
	Dunnage		Flat Washers	Sheet 3, Detail D; Sheet 6, Detail V	С	N/A	28
			U-Type Fasteners	Sheet 3, Detail D; Sheet 6, Detail V	C	N/A	28
		OCV	Silicone Wear Pad	Sheet 2, Detail "TRUPACT-II Packaging"	С	N/A	29
			Annulus Foam Ring (optional)	Sheet 2, Detail B	С	N/A	29
			Shell Stiffening Ring	Sheet 3, Detail P	A	N/A	04
		OCA	Cylindrical Shells	Sheet 3, Details L, M, and N	A	N/A	05
Structural Integrity			Upper Flanged and Dished Head	Sheet 3, Detail M	A	N/A	06
			Lower Flanged and Dished Head	Sheet 3, Detail L	A	N/A	06
			Upper Z-Flange	Sheet 2, Detail B	В	N/A	07
			Lower Z-Flange	Sheet 2, Detail B	В	N/A	07
	Impact Limiter		Fire Vent Weld Flanges	Sheet 5, Sections S-S & Z-Z	В	N/A	18
			Foam Fill Port Doubler Plates	Sheet 5, Sections K-K & Z-Z	В	N/A	18
			Foam Fill Port Cover Plates	Sheet 5, Sections K-K & Z-Z	В	N/A	18
			Ceramic Fiber Paper	Sheet 2, Detail B; etc.	A	N/A	19
			Polyurethane Foam	Sheet 2, Detail "TRUPACT-II Packaging"	A	N/A	20
			RTV Silicone Adhesive	Sheet 1, Flag Note 34	С	N/A	31
	Packaging	OCA	Guide Plates (optional)	Sheet 6, Detail U	С	N/A	29
	Hardware	OCA	Guide Plate Pan Head Screws (optional)	Sheet 6, Detail U	С	N/A	29
			Tamper Indicating Seals	Sheet 3, Detail E; Sheet 4, View AL-AL	С	N/A	30
Operations Support	Security Lockwire	OCA	Tamper Indicating Tie-Wires	Sheet 3, Detail E; Sheet 4, View AL-AL	С	N/A	30
~ *PF			Hex Head Cap Screw	Sheet 4, Section H-H	С	N/A	30

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NUREG/CI	R-6407 Definition		TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V					
Function Component Type			Item Description	Drawing Reference	QL	Ref. Doc.	QCA	
			Fork Lift Pockets	Sheet 6, Section AA-AA		N/A	25	
			Cover Plates	Sheet 5, Detail BB	C	N/A	30	
	Forklift Channels	OCA	Round Bars	Sheet 5, Section BC-BC	C	N/A	30	
			Internal Thread Inserts (optional)	Sheet 5, Section BC-BC	C	N/A	30	
			Pan Head Screws and Flat Washers	Sheet 5, Section BC-BC	C	N/A	30	
			Lifting Straps	Sheet 5, Section AD-AD	В	N/A	25	
			Doubler Plates	Sheet 5, Section AG-AG	В	N/A	25	
	Lid Lifting	OCA	Round Bars	Sheet 5, View AE-AE	В	N/A	25	
	Hardware	OCA	Round Tubing	Sheet 5, Section AD-AD	C	N/A	30	
			Hex Head Cap Screws and Lock Washers	Sheet 5, View AE-AE	C	N/A	30	
			Covers, Lanyards, and Spring Clips	Sheet 5, Section AD-AD	C	N/A	30	
	Tie-down Components	OCA	Tie-down Lugs	Sheet 5, View R-R	В	N/A	26	
Operations			Side Doubler Plates	Sheet 5, View R-R	В	N/A	26	
Support			Gussets	Sheet 11, Section T-T	В	N/A	26	
			Bottom Doubler Plates	Sheet 11, Section T-T	В	N/A	26	
			Bottom Tripler Plates	Sheet 11, Sections BD-BD & BE-BE	В	N/A	26	
			Inner Vent Port Plug	Sheet 4, Section J-J	C	N/A	14	
			Vent Port Cover	Sheet 4, Section J-J	C	N/A	14	
			Wiper O-ring Seal Holder	Sheet 4, Section J-J	С	N/A	14	
	Vent and Seal Test		Pan/Round Head Drive Screws	Sheet 4, Section J-J	C	N/A	14	
	Port Plugs and Covers, and	ICV	Debris Shield	Sheet 6, Detail V	C	N/A	14	
	Pressure Relief	IC V	Debris Shield Adhesive Tape	Sheet 7, Detail "ICV Upper Seal Flange"	С	N/A	14	
	Devices		Vent Port Mesh (optional)	Sheet 4, Section J-J	С	N/A	14	
			Polyethylene Filter (optional)	Sheet 9, Detail AU	С	N/A	14	
			Seal Test Port Insert	Sheet 4, Section AK-AK	В	N/A	23	
			Seal Test Port Plug	Sheet 4, Section AK-AK	В	N/A	23	

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NUREG/CR-6407 Definition			TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V				
Function Component Type			Item Description	Drawing Reference	QL	Ref. Doc.	QCA
			Seal Test Port Access Plug	Sheet 4, Section G-G		N/A	13
			Seal Test Port Doubler Plate	Sheet 4, Section G-G	В	N/A	13
			Seal Test Port Coupling	Sheet 4, Section G-G	В	N/A	13
			Seal Test Port Fiberglass Tube	Sheet 4, Section G-G	C	N/A	15
			Seal Test Port Tubing	Sheet 4, Section G-G	C	N/A	15
			Vent Port Access Plug	Sheet 4, Section H-H	В	N/A	13
	Vent and Seal Test		Vent Port Doubler Plate	Sheet 4, Section H-H	В	N/A	13
	Port Plugs and Covers, and	OCA	Vent Port Coupling (Outboard)	Sheet 4, Section H-H	В	N/A	13
	Pressure Relief	OCA	Vent Port Fiberglass Tube	Sheet 4, Section H-H	C	N/A	15
	Devices		Vent Port Plug Handling O-ring Seal	Sheet 9, Detail "OCV Vent Port Plug"	С	N/A	15
			Vent Port Cover	Sheet 4, Section H-H		N/A	15
Operations			Vent Port Cover Handling O-ring Seal	Sheet 9, Detail "OCV Vent Port Cover"		N/A	15
Support			Seal Test Port Insert	Sheet 4, Section G-G	В	N/A	23
			Seal Test Port Plug	Sheet 4, Section G-G	В	N/A	23
			Epoxy Adhesive	Sheet 1, Flag Note 32	C	N/A	31
			RTV Silicone Adhesive	Sheet 1, Flag Note 33	C	N/A	31
			Test O-ring Seal	Sheet 4, Section AK-AK	C	N/A	12
			Inner Vent Port Plug O-ring Seal	Sheet 10, Detail "ICV Inner Vent Port Plug"	C	N/A	14
		ICV	Vent Port Cover O-ring Seal	Sheet 10, Detail "ICV Vent Port Cover"	C	N/A	14
	Outer Seals		Wiper O-ring Seal	Sheet 4, Section J-J	C	N/A	14
	Outer Sears		Seal Test Port Plug O-ring Seal	Sheet 9, Detail "OCV & ICV Seal Test Port Plug"	В	N/A	23
			Test O-ring Seal	Sheet 4, Section G-G	C	N/A	12
		OCV	Vent Port Cover O-ring Seal	Sheet 9, Detail "OCV Vent Port Cover"	C	N/A	15
			Seal Test Port Plug O-ring Seal	Sheet 9, Detail "OCV & ICV Seal Test Port Plug"	В	N/A	23
Miscellaneous	Miscellaneous	OCA	Paint (optional)	Sheet 1, General Note 25	C	N/A	29
iviiscenaneous	Miscellaneous	OCA	Nameplates	Sheet 2, Detail "TRUPACT-II Packaging"	С	N/A	29

System No. <u>PT01</u> Document No. <u>PE-04-0001</u> Rev. <u>0</u>

NUREG/CR-6407 Definition			TRUPACT-II Safety Analysis Report Drawing No. 2077-500SNP, Rev. V						
Function	<b>Component Type</b>		Item Description	Drawing Reference	QL	Ref. Doc.	QCA		
		OCA	Labels	Sheet 2, Detail "TRUPACT-II Packaging"	C	N/A	29		
		OCA	Shipping Label Holder (optional)	Sheet 2, Detail "TRUPACT-II Packaging"	C	N/A	29		
		Miscellaneous All	Weld Filler Material	Most drawing sheets		N/A	27		
Miscellaneous	Migaellaneous		Vacuum Grease	Sheet 1, Flag Notes 15 & 38	С	N/A	31		
Miscenaneous	Miscenaneous		Stainless Steel Compatible Lube (optional)	Sheet 6, Details U & V	С	N/A	31		
			Nickel Bearing Lubricant	Sheet 1, Flag Note 16	С	N/A	31		
			Thread Locking Compound	Sheet 1, Flag Note 17	С	N/A	31		
			Labeling	Sheet 1, Flag Notes 29, 30, & 40	С	N/A	31		

ΕA	.08PT3006-1-0	QUALITY CATE	GORY ASSESSMEN	NT	Page 7 of 47
Sys	stem No. PT01	_	Document No	PE-04-0001	Rev0
Su	bject <u>TRUPACT-II Pacl</u>	kage	QCA No	01	Rev. <u>0</u>
Dra	awing No. PacTec Draw	ving No. 2077-500SNP (	TRUPACT-II SAR Drawin	g)	Rev. V
İTE	M DESCRIPTION:				
		ICV AND OCV CYLIN	DRICAL AND CONICAL SHE	LLS	
1.	F/N 19, Zone A-6/7/8; Sh 4/5/6; Sheet 1, G/N 27, Z	eet 1, G/N 23, Zone D-4 Zone C-4/5/6; Sheet 1, G	G/N 7, Zone C-6/7/8; Sheet 1, G/N 24, Zone /N 47, Zone C-2/3/4; Sheet C-7/8; Sheet 3, Detail D, Z	D-4/5/6; Sheet 1, 1, G/N 50, Zone	G/N 26, Zone D-B-2/3/4; Sheet 2,
2.	Zone A-6/7/8; Sheet 1, G/N G/N 27, Zone C-4/5/6; Sheet	N 23, Zone D-4/5/6; Sheet et 1, G/N 47, Zone C-2/3/4;	N 7, Zone C-6/7/8; Sheet 1, C 1, G/N 24, Zone D-4/5/6; Sheet 1, G/N 50, Zone B-2/3/ (Option 1); Sheet 3, Detail P, 2	eet 1, G/N 26, Zor 4; Sheet 2, Detail B	ne D-4/5/6; Sheet 1, B, Zone B-3/4; Sheet
Qu	JALITY CATEGORY:		☐ Category B	☐ Categor	y C
Ba	sis:				
are Fai con	required to maintain con lure of the ICV and OCV adition adversely affecting	tainment under normal shells could release rapublic health and safety.		hypothetical accepackaging, direct	cident conditions. etly resulting in a
	tical Characteristics:		, ,	Other (state b	ŕ
is (	0.178-inch, and the minimum	um thickness for all 1/4-	e minimum thickness for all inch nominal thickness mat 17 of ASTM A480-95a or A	erial is 0.240-incl	h. The maximum
Sub late	osection NE, Article NE-4	220, of the ASME Boile coordance with Section I	e with the tolerance requirer and Pressure Vessel Code II, Division 1, Subsection N Addenda, or later).	e (1986 Edition,	1987 Addenda, or
pers 198 acce Pres Div Edi ASS	sonnel shall be qualified in 87 Addenda, or later). Visual ordance with Section III, Divisorre Vessel Code (1986 Edvision 1, Subsection NB, Artition, 1987 Addenda, or later	accordance with Section I lly examine welds in accor- vision 1, Subsection NB, A lition, 1987 Addenda, or I icle NB-5000, and Section r). Welds shall conform t	ation (V-groove if longitudina IX of the ASME Boiler and rdance with AWS D1.1, liquid Article NB-5000, and Section ater), and radiograph test insp V, Article 2, of the ASME B to Section III, Division 1, Sub 287 Addenda, or later), and sh	Pressure Vessel C d penetrant inspect V, Article 6, of the pected in accordan- oiler and Pressure osection NB, Artic	ode (1986 Edition, on the final pass in ASME Boiler and ce with Section III, Vessel Code (1986 le NB-4400, of the
Со	MMERCIAL GRADE DEDICA	- ATION: (SUMMARIZE CHA	ARACTERISTICS)		
N/A	A				
	/u //u				

Preparer

Date

Date

Date

Toll C. Selln 11/23/04

Cognizant Engineer

Date

Ognizant Manager

Date

Date

Date

EA	08PT3006-1-0 QUALITY CATEGORY ASSESSMENT	Page 8 of 47
Sys	stem No. <u>PT01</u> Document No. <u>PE-04-0001</u>	Rev. <u>0</u>
Sul	bject TRUPACT-II Package QCA No. 02	Rev. 0
Dra	awing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing)	Rev. V
ITE	M DESCRIPTION:	
	ICV AND OCV SEAL FLANGES AND LOCKING RINGS	
1.	ICV: Sheet 1, G/N 6, Zone C/D-6/7/8; Sheet 1, G/N 7, Zone C-6/7/8; Sheet 1, G/N 8, Zone C-11, Zone B/C-6/7/8; Sheet 6, Detail V, Zone A-7 (Option 1); Sheet 6, Detail V, Zone A-5 (Optial "ICV UPPER, SEAL FLANGE", Zone B/C-7; Sheet 7, Detail "ICV LOWER SEAL A/B-5; Sheet 7, Detail "ICV LOCKING RING", Zone B/C-3/4	Option 2); Sheet 7,
2.	<b>OCV:</b> Sheet 1, G/N 6, Zone C/D-6/7/8; Sheet 1, G/N 7, Zone C-6/7/8; Sheet 1, G/N 8, Zone C-11, Zone B/C-6/7/8; Sheet 6, Detail U, Zone C/D-6/7; Sheet 7, Detail "OCV UPPER SEAL FLAN Sheet 7, Detail "OCV LOWER SEAL FLANGE", Zone C/D-5; Sheet 7, Detail "OCV LOCK C/D-3/4"	IGE", Zone C/D-7;
Qu	ALITY CATEGORY:   Category A   Category B   Category B	ry C
Bas	sis:	
are acc	e seal flanges and locking rings are a primary part of the inner and outer containment vessel (IC required to maintain positive closure and containment under normal conditions of transport ident conditions. Failure of the ICV and OCV seal flanges and locking rings could release ram the packaging, directly resulting in a condition adversely affecting public health and safety.	and hypothetical
Cri	tical Characteristics:   CMTR (chemicals and physicals)  Other (state I	pelow):
	inless steel material per ASTM A240, Type 304 (rolled and full penetration welded plate), ade F304 (forged billet), or ASTM A351, Grade CF8A (centrifugal casting).	or ASTM A182,
Pre D1. NB late	then using rolled and welded plate for the seal flanges and/or locking rings, all welding shall be full procedures and welding personnel shall be qualified in accordance with Section IX of the assure Vessel Code (1986 Edition, 1987 Addenda, or later). Visually examine welds in accordance in liquid penetrant inspect on the final pass in accordance with Section III, Division 1, Subsection V, Article 6, of the ASME Boiler and Pressure Vessel Code (1986 Edition, etc.), and radiograph test inspect in accordance with Section III, Division 1, Subsection NB, Article 2, of the ASME Boiler and Pressure Vessel Code (1986 Edition, 1987 Addenda, 1987 Addenda, 1987 Addenda, 1988 Edition, 1988	ASME Boiler and rdance with AWS ection NB, Article 1987 Addenda, or icle NB-5000, and
Div	rged billets and centrifugal castings shall be radiograph or ultrasonic test inspected in accordance vision 1, Subsection NB, Article NB-2500, and Section V, Article 2 or Article 5, respective iler and Pressure Vessel Code (1986 Edition, 1987 Addenda, or later).	
Со	MMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)	
N/A	A	

Preparer Date

The Cognizant Manager Date

11.19.04

11.19.04

Date

Toold C. Sellm 11/23/04

Cognizant Engineer Date

OA Representative Date

EΑ	.08PT3006-1-0	QUALITY CATEGORY ASSESSME	ENT	Page	9 of 47
Sy	stem No. PT01	_ Document No.	PE-04-0001	Rev	0
Su	bject <u>TRUPACT-II Pack</u>	age QCA No.	03	Rev	0
Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing)					
ITE	M DESCRIPTION:				
		ICV AND OCV ASME FLANGED AND DISHED I	HEADS		
1.	8, Zone C-6/7/8; Sheet 1 2/3/4; Sheet 3, "ASME I	<b>Heads:</b> Sheet 1, G/N 6, Zone C/D-6/7/8; Sheet 1, F/N 19, Zone A-6/7/8; Sheet 1, G/N 47, Zone FLANGED AND DISHED HEADS", Zone A/E on 2); Sheet 6, Detail V, Zone A/B-7 (Option 1); S	C-2/3/4; Sheet 1, C 3-1/2/3; Sheet 3, De	G/N 50, Z tail D, Zo	Zone Bone D-7
2.	Zone C-6/7/8; Sheet 1, F/	<b>Heads:</b> Sheet 1, G/N 6, Zone C/D-6/7/8; Sheet 1, /N 19, Zone A-6/7/8; Sheet 1, G/N 47, Zone C-2 ED AND DISHED HEADS", Zone A/B-1/2/3; Se D-7	/3/4; Sheet 1, G/N 5	0, Zone I	B-2/3/4;
Qu	JALITY CATEGORY:	☐ Category B	☐ Category	, C	
Ва	sis:				
anc Fai	d are required to maintain c	d heads are a primary part of the inner and outer ontainment under normal conditions of transport heads could release radioactive material from to public health and safety.	and hypothetical acc	eident con	ditions.
Cri	itical Characteristics:		○ Other (state be)	elow):	
tha A2	n the maximum thickness a	TM A240, Type 304. The thickness of as-rolled n llowed for 1/4-inch nominal thickness material per allow for thinning during the forming process. The 240-inch after forming.	Table A1.17 of AS	TM A480	95a or
	pricate heads in accordance denda, or later).	with Section VIII of the ASME Boiler and Press	ure Vessel Code (19	986 Editio	n, 1987
wei (19 insj Art insj AS	lding personnel shall be que 186 Edition, 1987 Addenda pect on the final pass in accicle 6, of the ASME Boiler pect in accordance with Section 1881 Pect in acc	the ASME flanged and dished heads shall be full palified in accordance with Section IX of the ASI, or later). Visually examine welds in accordance ordance with Section III, Division 1, Subsection and Pressure Vessel Code (1986 Edition, 1987 Action III, Division 1, Subsection NB, Article NB-Sessel Code (1986 Edition, 1987 Addenda, or later the Assertion III, Division 1, Subsection NB, Article NB-Sessel Code (1986 Edition, 1987 Addenda, or later the ASME Sessel Code (1986 Edition, 1987 Addenda, or later the A	ME Boiler and Press ce with AWS D1.1 NB, Article NB-5000 addenda, or later), an 5000, and Section V	sure Vesse, liquid per 0, and Second radiogram, Article 2	el Code enetrant etion V, aph test 2, of the
Co	MMERCIAL GRADE DEDICA	TION: (SUMMARIZE CHARACTERISTICS)			
N/A	A				

Preparer

Date

Date

Toold C. Sellm 11/23/04

Cognizant Engineer

Date

OA Representative

Date

EA08PT3006-1-0 QUALITY CATEGORY ASSESSMENT					17
System No. PT01		ocument No	PE-04-0001	Rev0	_
Subject <u>TRUPACT-II Pack</u>	age	QCA No	04	Rev0	_
Drawing No. PacTec Draw	ng No. 2077-500SNP (TRUPACT	-II SAR Drawing	<u>g)</u>	Rev. V	_
ITEM DESCRIPTION:					_
Оитн	CR CONTAINMENT VESSEL (OCV)	SHELL STIFFEN	ING RING		
Sheet 1, F/N 19, Zone A-6/7/8;	Sheet 3, Detail P, Zone B-3/4				
QUALITY CATEGORY:	☐ Category A ☐ Ca	ategory B	☐ Category	С	
Basis:					
containment shell buckling und	shell stiffener is a structural particle of the shell stiffener is a structura	and hypothetical	accident condition	s. Failure of the	he
Critical Characteristics:		sicals)	Other (state be	elow):	
3/8-inch nominal thickness ma	TM A276, or ASTM A479, Type 3 aterial is 0.365 inch. The maximu 5a or A2.17 of ASTM A480-99b.				
COMMERCIAL GRADE DEDICA	TION: (SUMMARIZE CHARACTERIST	TICS)			_
N/A					

Preparer
Date

11.19.04

11.19.04

Date

Cognizant Manager

Date

Joel C. Sellm 11/23/04

Cognizant Engineer

Date

QA Representative

Date

EA08PT3006-1-0	QUALITY CATE	GORY ASSESSME	NT	Page 11 of 47
System No. PT01	_	Document No.	PE-04-0001	Rev0
Subject <u>TRUPACT-II Pack</u>	age	QCA No.	05	Rev0
Drawing No. PacTec Draw	ing No. 2077-500SNP (	TRUPACT-II SAR Drawi	ng)	Rev. V
ITEM DESCRIPTION:				
	OCA CYL	INDRICAL SHELLS		
Sheet 1, G/N 6, Zone C/D-6/7/8 6/7/8; Sheet 1, G/N 23, Zone I 27, Zone C-4/5/6; Sheet 1, G/ PACKAGING", Zone A/B-5; S A/B-6; Sheet 3, Detail N, Zone	D-4/5/6; Sheet 1, G/N 24/N 47, Zone C-2/3/4; Sl Sheet 2, Detail B, Zone F	, Zone D-4/5/6; Sheet 1, Gheet 1, G/N 50, Zone B-2	3/N 26, Zone C/D-4/3 2/3/4; Sheet 2, Deta	5/6; Sheet 1, G/N il "TRUPACT-II
QUALITY CATEGORY:		☐ Category B	☐ Category	С
Basis:				
The outer cylindrical shells of limiter", and are required to st hypothetical accident condition underlying polyurethane foam material from the packaging an	ructurally and thermally ns. Failure of the shells and thus, the effectiven	protect containment under could reduce the structura tess of the containment se	er normal conditions al and/or thermal eff als, resulting in a re	of transport and ectiveness of the lease radioactive
Critical Characteristics:		s and physicals)	Other (state be only)	elow):
Stainless steel material per As material is 0.240-inch, and the maximum thickness for all m A480-99b.	e minimum thickness for	or all 3/8-inch nominal th	ickness material is	0.365-inch. The
Fabricate cylindrical shells in a Article NE-4220, of the ASM shell joints in accordance with Pressure Vessel Code (1986 E.	IE Boiler and Pressure  n Section III, Division 1	Vessel Code (1986 Edition 1, Subsection NB, Article	on, 1987 Addenda,	or later), and all
All construction welding of the welding personnel shall be que (1986 Edition, 1987 Addenda, inspect on the root and final personnel section V, Article 6, of the Aradiograph test inspected in act V, Article 2, of the ASME Beconform to Section III, Divisio (1986 Edition, 1987 Addenda,	nalified in accordance we or later). Visually examples in accordance with ASME Boiler and Pressecordance with Section 2 poiler and Pressure Vesseon 1, Subsection NF, Ar	ith Section IX of the ASI nine welds in accordance v Section III, Division 1, So ture Vessel Code (1986 F III, Division 1, Subsection of Code (1986 Edition, 19 ticle NF-4400, of the ASI	ME Boiler and Press with AWS D1.1, and absection NB, Artic Edition, 1987 Adder in NB, Article NB-50 187 Addenda, or late ME Boiler and Press	sure Vessel Code I liquid penetrant le NB-5000, and nda, or later), or 000, and Section er). Welds shall
COMMERCIAL GRADE DEDICA	TION: (SUMMARIZE CHA	RACTERISTICS)		
N/A				

Preparer Date

War Cavinian 11.19.04

Cognizant Manager Date

Date

OA Representative

Date

Date

OA Representative

Date

EA08PT3006-1-0 QUALITY CATEGORY ASSESSMENT	Page 12 of 47
System No. PT01 Document No. PE-04-0001	Rev. <u>0</u>
Subject TRUPACT-II Package QCA No. 06	Rev0
Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing)	Rev. V
ITEM DESCRIPTION:	
OCA ASME FLANGED AND DISHED HEADS	
Sheet 1, F/N 19, Zone A-6/7/8; Sheet 2, Detail "TRUPACT-II PACKAGING", Zone A/B-5; Sheet 1, FLANGED AND DISHED HEADS", Zone A-1/2/3; Sheet 3, Detail L, Zone A-7/8; Sheet 3, Detail M, Z	
QUALITY CATEGORY:   Category A   Category B   Category C	<del></del>
Basis:	
The ASME flanged and dished heads comprise an important portion of the outer containment as "impact limiter", and are required to structurally and thermally protect containment under normal transport and hypothetical accident conditions. Failure of the heads could reduce the structural effectiveness of the underlying polyurethane foam and thus the effectiveness of the containment seals release of radioactive material from the packaging and directly result in a condition adversely affectin and safety.	l conditions of and/or thermal s, resulting in a
Critical Characteristics:   CMTR (chemicals and physicals)  Other (state below)	ow):
Stainless steel material per ASTM A240, Type 304. The thickness of as-rolled material used for heads than the maximum thickness allowed for 1/4-inch nominal thickness material per Table A1.17 of ASTM A2.17 of ASTM A480-99b to allow for thinning during the forming process. The minimum thickness nominal thickness material is 0.240-inch after forming.	M A480-95a or
Fabricate heads in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code (1986 Addenda, or later).	6 Edition, 1987
All construction welding of the ASME flanged and dished heads shall be full penetration, and weld welding personnel shall be qualified in accordance with Section IX of the ASME Boiler and Pressur (1986 Edition, 1987 Addenda, or later). Visually examine welds in accordance with AWS D1.1, I inspect on the final pass in accordance with Section III, Division 1, Subsection NB, Article NB-5000, Article 6, of the ASME Boiler and Pressure Vessel Code (1986 Edition, 1987 Addenda, or later), and inspect in accordance with Section III, Division 1, Subsection NB, Article NB-5000, and Section V, A ASME Boiler and Pressure Vessel Code (1986 Edition, 1987 Addenda, or later). Welds shall have reinforcement of 3/32-inch.	re Vessel Code liquid penetrant and Section V, radiograph test Article 2, of the
COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)	
N/A	

Preparer

Date

Tock C. Sellm 11/23/04

Cognizant Engineer

Date

Cognizant Manager

Date

Date

Date

OA Representative

Date

EA08PT3006-1-0 QUALITY (	CATEGORY ASSESSMENT	Page 13 of 47
System No. PT01	Document No.	PE-04-0001 Rev. 0
Subject TRUPACT-II Package	QCA No	Rev0
Drawing No. PacTec Drawing No. 2077-50	OSNP (TRUPACT-II SAR Drawing)	Rev. <u>V</u>
ITEM DESCRIPTION:		
OCA U	PPER AND LOWER Z-FLANGES	
Sheet 1, G/N 6, Zone C/D-6/7/8; Sheet 1, G/N Zone C-4/5/6; Sheet 2, Detail B, Zone B/C-2/3	N 7, Zone C-6/7/8; Sheet 1, G/N 8,	Zone C-6/7/8; Sheet 1, F/N 28,
QUALITY CATEGORY: Category	A 🔀 Category B	☐ Category C
Basis:		
The OCA upper and lower Z-flanges comprise and are required to structurally and thermal hypothetical accident conditions. However, thermal shield. Failure of the Z-flanges could the containment seals, resulting in a release rafailure of the locking Z-flange and outer therm health and safety.	lly protect containment under norm the Z-flanges are positioned behind reduce the effectiveness of the closuradioactive material from the packaging	nal conditions of transport and the locking Z-flange and outer re region thermal design and thus ng, but only in conjunction with
Critical Characteristics:   CMTR (ch	nemicals and physicals)	Other (state below):
Stainless steel material per ASTM A240, Type (0.075-inch), with sheet thickness tolerances in A480-99b.		
If Z-flanges are fabricated as welded assembli weld procedures and welding personnel shall Pressure Vessel Code (1986 Edition, 1987 Adde D1.1 and liquid penetrant inspect in accordance ASME Boiler and Pressure Vessel Code (1986 F	be qualified in accordance with Secenda, or later). Visually examine but with Section III, Division 1, Subsection	tion IX of the ASME Boiler and t welds in accordance with AWS
COMMERCIAL GRADE DEDICATION: (SUMMARI	ZE CHARACTERISTICS)	
N/A		

Preparer

Date

Toold C. Sellm 11/23/04

Cognizant Engineer

Date

Cognizant Manager

Date

Date

OA Representative

Date

EA08PT3006-1-0	QUALITY CATEGORY ASSESSMENT	Page 14 of 47
System No. PT01	Document No. PE-04	4-0001 Rev. 0
Subject <u>TRUPACT-II Packag</u>	e QCA No(	08 Rev. <u>0</u>
Drawing No. PacTec Drawing	No. 2077-500SNP (TRUPACT-II SAR Drawing)	Rev. <u>V</u>
TEM DESCRIPTION:		
	OCA LOCKING Z-FLANGE	
Sheet 1, G/N 6, Zone C/D-6/7/8 Zone C-4/5/6; Sheet 2, Detail B,	; Sheet 1, G/N 7, Zone C-6/7/8; Sheet 1, G/N 8, Zone Zone B/C-2/3	: C-6/7/8; Sheet 1, F/N 28,
QUALITY CATEGORY:	Category A Category B	Category C
Basis:		
positive closure and containment of the locking Z-flange could res	orises a portion of the packaging's lid closure hardware, under normal conditions of transport and hypothetical a ult in separation of the lid and body, which would release in a condition adversely affecting public health and safe	accident conditions. Failure se radioactive material from
Critical Characteristics:	CMTR (chemicals and physicals)	er (state below):
	A240, Type 304. The thickness for the locking Z-flang accordance with Table A1.2 of ASTM A480-95a or A2	
weld procedures and welding pe Pressure Vessel Code (1986 Editi D1.1 and liquid penetrant inspect	Ided assemblies, all construction welding shall be full rsonnel shall be qualified in accordance with Section I on, 1987 Addenda, or later). Visually examine butt weld in accordance with Section III, Division 1, Subsection II Code (1986 Edition, 1987 Addenda, or later).	X of the ASME Boiler and ds in accordance with AWS
COMMERCIAL GRADE DEDICATION	n: (SUMMARIZE CHARACTERISTICS)	
N/A		

Joeld C. Sella 11/23/04
Cognizant Engineer Date

Date

Of Representative Date 11.23.04 Cognizant Manager

EA08PT3006-1-0	QUALITY CATEGORY ASSESSME	NT	Page 15 of 47	
System No. PT01	Document No.	PE-04-0001	Rev0	
Subject <u>TRUPACT-II Pact</u>	kage QCA No.	09	Rev0	
Drawing No. PacTec Draw	ving No. 2077-500SNP (TRUPACT-II SAR Drawin	g)	RevV	
ITEM DESCRIPTION:				
	ICV Upper and Lower Spacer Brackets			
Sheet 1, F/N 19, Zone A-6/7/8; Sheet 6, Detail V, Zone B-7 (Option 1); Sheet 6, Detail V, Zone B-5 (Option 2); Sheet 3, Detail D, Zone D-7 (Option 1); Sheet 3, Detail D, Zone D-5 (Option 2)				
QUALITY CATEGORY:	☐ Category A ☐ Category B		С	
Basis:				
The brackets secure the upper and lower spacer assemblies to the ICV, and are welded to the containment boundary. Furthermore, these items are optional and have no safety significance. Failure of the brackets would not release radioactive material from the packaging, resulting in no condition adversely affecting public health and safety.				
Critical Characteristics:	☐ CMTR (chemicals and physicals)	Other (state be	elow):	
	STM A240, Type 304. The thickness for the bracket thickness tolerances in accordance with Table A1			
COMMERCIAL GRADE DEDICA	ATION: (SUMMARIZE CHARACTERISTICS)			
N/A				

Preparer
Date

11.19.04

11.19.04

Date

Cognizant Manager

Date

Joel C. Sellm 11/23/04

Cognizant Engineer

Date

QA Representative

Date

EA08PT3006-1-0 QI	UALITY CATEGORY ASSESSME	NT	Page 16 of 47		
System No. PT01	Document No.	PE-04-0001	Rev0		
Subject TRUPACT-II Package QCA No. 10 Rev. 0					
Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing) Rev. V					
ITEM DESCRIPTION:					
	ICV UPPER AND LOWER SPACERS				
1. Upper and Lower Spacer F. Sheet 6, Detail "SPACER DET	acing Sheet: Sheet 2, Detail "TRUPACT-ITAIL", Zone C/D-3/4/5	II PACKAGING", Z	Zone A/B-6/7/8;		
2. Upper and Lower Spacer E Sheet 6, Detail "SPACER DET	<b>Ioneycomb:</b> Sheet 2, Detail "TRUPACT-I ΓAIL", Zone C/D-3/4/5	I PACKAGING", 2	Zone A/B-6/7/8;		
QUALITY CATEGORY:	Category A	☐ Category	С		
Basis:					
under normal conditions of transpo	are internal dunnage that reduces impact loant and hypothetical accident conditions. Failed in a release of radioactive material from the	ure of the upper and	or lower spacer		
Critical Characteristics:	CMTR (chemicals and physicals)	Other (state be	elow):		
Leave Lower Spacer Facing Sheet: The sheet material is 0.080-inch thick aluminum per ASTM B209, Type 6061-T6. The sheet may be constructed using two pieces joined with a full penetration weld at the center.					
	<b>oneycomb:</b> The aluminum honeycomb mated maximum bare compressive/crush strength of				
COMMERCIAL GRADE DEDICATION	: (SUMMARIZE CHARACTERISTICS)				
N/A					

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System No. PT01	D	ocument No1	PE-04-0001	Rev	0
Subject <u>TRUPACT-II Packa</u>	ge	QCA No	11	Rev.	0
Drawing No. PacTec Drawi	ng No. 2077-500SNP (TRUPACT	-II SAR Drawing)		Rev.	<u>V</u>
TEM DESCRIPTION:					
	LID/BODY INNER (CONTAINMEN	T) O-RING SEALS			
1. ICV: Sheet 1, G/N 18, Zo	ne A-6/7/8; Sheet 4, Section AK-A	K, Zone B-7			
2. <b>OCV:</b> Sheet 1, G/N 18, Zo	ne A-6/7/8; Sheet 4, Section G-G,	Zone D-5			
	VENT PORT PLUG (CONTAINMEN	NT) O-RING SEALS			
1. ICV: Sheet 1, G/N 18, Zo	ne A-6/7/8; Sheet 10, Detail "ICV	OUTER VENT PO	ORT PLUG", Zo	one B-2/3	
2. OCV: Sheet 1, G/N 18, Zo	ne A-6/7/8; Sheet 9, Detail "OCV	VENT PORT PLU	JG", Zone C-7/8	3	
Quality Category: Basis:	⊠ Category A □ Ca	itegory B	☐ Category	С	
under normal conditions of tra	ring seal and each vent port plugnsport and hypothetical accident rial from the packaging, directly	conditions. Failur	re of a containi	nent O-rin	ng seal
		,	Other (state be	elow):	
Commercial Grade Dedicat Physical Characteristics:	ION: (SUMMARIZE CHARACTERIST	ICS)			

Butyl rubber material per RR-0405-70, Rainier Rubber Company, Seattle, Washington, or equivalent meeting the requirements of ASTM D2000 M4AA710 A13 B13 F17 F48 Z trace elements. Dimensions for each O-ring seal shall be as follows:

- 1. ICV Lid/Body Inner:  $71\frac{1}{2}$ -inch ( $\pm 2\%$ ) I.D.  $\times \emptyset 0.400$ -inch  $\pm 0.010$ -inch
- 2. **OCV Lid/Body Inner:** 75%-inch ( $\pm 2\%$ ) I.D.  $\times \emptyset 0.400$ -inch  $\pm 0.010$ -inch
- 3. ICV Outer Vent Port Plug: Size per Parker AS-568-910 (3-910); 0.755-inch ( $\pm 0.009$ -inch) I.D.  $\times$  Ø0.097-inch  $\pm 0.003$ -inch
- **4. OCV Vent Port Plug:** Size per Parker AS-568-906 (3-906); 0.468-inch ( $\pm 0.005$ -inch) I.D.  $\times$  Ø0.078-inch  $\pm 0.003$ -inch

## Performance Characteristics:

- 1. O-ring seal joints shall not fail when bent to a radius of 1/2-inch.
- 2. Demonstrate an acceptable batch of seal material by passing all helium leak tests and the vacuum test specified in *Verification Methods*, below.

A tark	11-19-04	Toold C. Sellm	- 11/23/04
Preparer Cavinin	Date 11 · 23 · 0 4	Cognizant Engineer	12-7-04
Cognizant Manager	Date	QA Representative	Date

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Verification	Methods:

System No.

1. Demonstrate acceptable O-ring seal joints by bending each joined region around a Ø1.0 bar. Acceptable O-ring seal joints will not separate during bend testing.

2. Qualify each batch of seal material as follows:

PT01

- a. Utilize a test fixture that is capable of testing two, Ø0.393-inch ±0.003-inch O-ring seals; the diameter of the test fixture need not be full scale (the test fixture in Nuclear Packaging Sketch SK-835, TRUPACT-II O-ring Test Fixture Assembly, or one of similar configuration should be used; the SK-835 test fixture is configured to allow the plug to radially shift relative to the bore and provide a minimum O-ring seal compression of 15% when the plug is fully translated, i.e., metal-to-metal contact on one side).
- **b.** Assemble the test fixture at room temperature with the two, lubricated test O-ring seals.
- c. Perform a series of helium leak tests to demonstrate leaktightness under all conditions (i.e.,  $1 \times 10^{-7}$  standard cubic centimeters per second (scc/s), or less, air reference leakage).
  - i. Center the plug inside the bore; while at room temperature, perform a helium leak test.
  - ii. Center the plug inside the bore; cool the test fixture to -40 °F; perform a helium leak test.
  - iii. Warm the test fixture to -20 °F; radially shift the plug relative to the bore to provide metal-to-metal contact on one side and minimum seal compression on the diametrically opposite side; perform a helium leak test.
  - iv. Maintain full radial offset; warm the test fixture to 300 °F; hold at temperature for eight hours minimum.
  - v. Verify that a rapid, hard vacuum (i.e., <1 torr, absolute) can be achieved and maintained for five (5) minutes between the two test O-ring seals.
  - vi. Maintain full radial offset; cool the test fixture to -20 °F; perform a helium leak test.

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System No. PT01	Document No	PE-04-0001	_ Rev	0	
Subject TRUPACT-II Package QCA No. 12 Rev. 0					
Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing) Rev. V					
ITEM DESCRIPTION:					
Lid/Body Ot	UTER (TEST) O-RING SEALS				
1. ICV: Sheet 1, F/N 44, Zone D-2/3/4; Sheet 4,	Section AK-AK, Zone B-7				
2. <b>OCV:</b> Sheet 1, F/N 44, Zone D-2/3/4; Sheet 4,	, Section G-G, Zone D-5				
QUALITY CATEGORY: Category A	☐ Category B	⊠ Categor	ry C		
Basis:					
Each lid/body outer (lower) O-ring seal is only required to perform leak testing of the containment O-ring seal. Failure of a test O-ring seal would not release radioactive material from the packaging, resulting in no condition adversely affecting public health and safety.					
Critical Characteristics: CMTR (chemic	cals and physicals)	Other (state	below):		
Neoprene or ethylene propylene rubber material pe with documentation containing dimensional and rub	× * *	Durometer). S	upply comp	ponents	
1. ICV Lid/Body Inner: 71%-inch (±2%) I.D. ×	Ø0.375-inch ±0.010-inch				
2. <b>OCV Lid/Body Inner:</b> 74 <sup>1</sup> / <sub>4</sub> -inch (±2%) I.D.	× Ø0.375-inch ±0.010-inch				
COMMERCIAL GRADE DEDICATION: (SUMMARIZE C	CHARACTERISTICS)				
N/A					

Preparer Date

| Date | Date | Doctor | Date 
System No. PT01 Document No. PE-04-0001 Rev. Subject TRUPACT-II Package QCA No. 13 Rev.	20 of 47  0  V  Sheet 4,			
Subject TRUPACT-II Package QCA No. 13 Rev.  Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing) Rev.  ITEM DESCRIPTION:  OCA/OCV EXTERNAL SEAL TEST PORT AND VENT PORT ACCESS COMPONENTS	0 V			
Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing) Rev.  ITEM DESCRIPTION:  OCA/OCV EXTERNAL SEAL TEST PORT AND VENT PORT ACCESS COMPONENTS	V			
ITEM DESCRIPTION:  OCA/OCV EXTERNAL SEAL TEST PORT AND VENT PORT ACCESS COMPONENTS				
OCA/OCV EXTERNAL SEAL TEST PORT AND VENT PORT ACCESS COMPONENTS	Sheet 4,			
	Sheet 4,			
1. Seal Test Port Access Plug: Sheet 4, Section G-G, Zone C/D-4	Sheet 4,			
	Sheet 4,			
2. Seal Test Port Doubler Plate: Sheet 1, F/N 19, Zone A-6/7/8; Sheet 4, Section G-G, Zone C/D-4; View AT-AT, Zone B-3				
<b>3. Seal Test Port Coupling:</b> Sheet 4, Section G-G, Zone C/D-4; Sheet 9, Detail "OCV SEAL TES COUPLING", Zone C/D-1/2	T PORT			
<b>4. Vent Port Access Plug:</b> Sheet 4, Section H-H, Zone C-2; Sheet 9, Detail "VENT PORT ACCESS PLU B/C-3/4	G", Zone			
<b>5. Vent Port Doubler Plate:</b> Sheet 1, F/N 19, Zone A-6/7/8; Sheet 4, Section H-H, Zone C/D-2; Sheet AN-AN, Zone B-2	t 4, View			
<b>6. Vent Port Coupling (Outboard):</b> Sheet 4, Section H-H, Zone C-2; Sheet 9, Detail "OCV VEN COUPLING (OUTBOARD)", Zone A/B-5	T PORT			
QUALITY CATEGORY:   Category A   Category B   Category C				
Basis:				
Each OCA external seal test port and vent port access component provides reinforcement for the OCA outer shell to protect the underlying OCV O-ring seals from hypothetical accident conditions. Failure of these components could cause the containment seals to fail and release radioactive material from the packaging, but only in conjunction with failure of the OCA outer shell and/or adjoining components, indirectly resulting in a condition adversely affecting public health and safety.				
Critical Characteristics:   CMTR (chemicals and physicals)  Other (state below):				
1. Seal Test Port Access Plug: 1½-inch NPT flush pipe plug; stainless steel material. Supply compone Certificate of Conformance containing configuration and material certification.	ent with a			
2. Seal Test Port Doubler Plate: 3/8-inch thick plate; stainless steel material per ASTM A240, Type 3 minimum thickness for 3/8-inch nominal thickness material is 0.365-inch. The maximum thickness for nominal material is in accordance with Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b material with a Certified Material Test Report (CMTR) containing chemical and physical properties.	r 3/8-inch			
<b>3. Seal Test Port Coupling:</b> Stainless steel material per ASTM A276 or A479, Type 304. Supply mater Certified Material Test Report (CMTR) containing chemical and physical properties.	ial with a			
<b>4. Vent Port Access Plug:</b> 1½-inch NPT flush pipe plug; stainless steel material. Supply componer Certificate of Conformance containing configuration and material certification.	nt with a			

Preparer

Date

Date

Toll C. Sellm 11/23/04

Cognizant Engineer

Date

Od Representative

Date

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System No. PT01	Document No	PE-04-0001	Rev0
<b>5. Vent Port Doubler Plate:</b> 3/8-inch thick plate; minimum thickness for 3/8-inch nominal thickness nominal material is in accordance with Table A1.17 material with a Certified Material Test Report (CMT)	naterial is 0.365-inch. The of ASTM A480-95a or A	ne maximum thick A2.17 of ASTM A4	ness for 3/8-inch 480-99b. Supply
<b>6. Vent Port Coupling (Outboard):</b> Stainless stee material with a Certified Material Test Report (CMT			
COMMEDIAL CRADE DEDICATION: (SLIMMARIZE CHARA	ACTEDISTICS)		

N/A

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Sys	stem No. <u>PT01</u>	<u></u>	Document No	PE-04-0001	Rev0
Sub	oject <u>TRUPACT-II Pa</u>	ckage	QCA No	14	Rev0
Dra	awing No. <u>PacTec Dra</u>	wing No. 2077-500SNP (T	RUPACT-II SAR Drawing	g)	Rev. V
ITE	M DESCRIPTION:				
		ICV COVERS AND DEBE	RIS EXCLUSION COMPONE	NTS	
1.	<b>Inner Vent Port Plug:</b> Zone B-6/7	Sheet 4, Section J-J, Zone	e C-7; Sheet 10, Detail "Io	CV INNER VENT	Γ PORT PLUG",
2.		<b>O-ring Seal:</b> Sheet 1, F/N NT PORT PLUG", Zone E		, F/N 44, Zone D	-2/3/4; Sheet 10,
3.	<b>Vent Port Cover:</b> She 1/2/3	et 4, Section J-J, Zone C-7	7; Sheet 10, Detail "ICV V	ENT PORT COV	ER", Zone C/D-
4.		et or O-ring Seal: Sheet : PORT COVER", Zone C/E		eet 1, F/N 44, Zor	ne D-2/3/4; Sheet
5.	<b>Wiper O-ring Seal:</b> Sl D-7	neet 1, F/N 18, Zone A-7/8	8; Sheet 1, R/N 43, Zone I	D-2/3/4; Sheet 4, 5	Section J-J, Zone
6.	Wiper O-ring Seal Hol	der: Sheet 1, F/N 19, Zone	A-6/7/8; Sheet 4, Section .	J-J, Zone D-7	
7.	Pan/Round Head Drive	e Screws: Sheet 4, Section	ı J-J, Zone D-7		
8.	<b>Debris Shield:</b> Sheet 6, "ICV UPPER SEAL FL	, Detail V, Zone A-7 (Optio ANGE", Zone B-7	on 1); Sheet 6, Detail V, Zo	one A-5 (Option 2	); Sheet 7, Detail
9.	Debris Shield Adhesive	e <b>Tape:</b> Sheet 7, Detail "IC	CV UPPER SEAL FLANC	BE", Zone B-7	
10.	<b>Optional Vent Port Me</b>	esh: Sheet 4, Section J-J, Z	Zone C-7		
11.	<b>Optional Polyethylene</b>	Filter: Sheet 7, Detail AU	J, Zone C-1/2		
Qu	ALITY CATEGORY:	☐ Category A	☐ Category B		C
Bas	sis:				
thes	e ICV covers and debris se components would no ecting public health and sa	exclusion components ked t release radioactive mater afety.	ep underlying ICV ports a rial from the packaging, r	and components c esulting in no con	elean. Failure of adition adversely
Crit	tical Characteristics:	☐ CMTR (chemicals	s and physicals)	Other (state b	elow):
1.		Brass material per ASTM ation containing material co		loy 360, 1/2 hard	temper. Supply
2.	2. Inner Vent Port Plug O-ring Seal: Size per Parker AS-568-906 (3-906); 0.468-inch (±0.005-inch) I.D. × Ø0.078-inch ±0.003-inch; butyl rubber material per RR-0405-70, Rainier Rubber Company, Seattle, Washington, or neoprene or ethylene propylene rubber material per ASTM D2000 (70, 80, or 90 Durometer). Supply component with documentation containing dimensional and material compliance.				
3.	Vent Port Cover: Bra documentation containing	ss material per ASTM B1 ng material compliance.	0 or ASTM B16, Alloy 3	60, 1/2 hard temp	per. Supply with
4.		ket or O-ring Seal: 1/16 n) I.D. × Ø0.116-inch ±0			
	At the	11-19-04	Joeld C.	Sellm	11/23/04
Prep	Wo Cavinin	Date 11.23.04	e Cognizant Engineer	Pleane 1	Date 2-7-04
Cogi	nizant Manager	Date	e QA Representative		Date

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## **QUALITY CATEGORY ASSESSMENT**

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Document No. PE-04-0001 Rev.

Rubber Company, or neoprene or ethylene propylene per ASTM D2000 (70, 80, or 90 Durometer). Supply component with documentation containing dimensional and material compliance.

- 5. Wiper O-ring Seal: Ø68-inch (±2%) I.D. × Ø0.375-inch ±0.010-inch; butyl rubber material per RR-0403-50 (Rainier Rubber Company, Seattle, Washington), buna-N rubber material per MIL-R-3065, Grade 50, fluorocarbon rubber material per ASTM D2000, MHK 607, Z1 (50 or 55 Shore A hardness), or fluorosilicone rubber material per MIL-R-25988. Supply component with documentation containing dimensional and rubber compound compliance.
- **6. Wiper O-ring Seal Holder:** Stainless steel material per ASTM A240, Type 304. The thickness of the wiper O-ring seal holder is 16-gauge (0.060-inch thick), with sheet thickness tolerances in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b. Supply component with documentation containing dimensional and material compliance.
- 7. Pan/Round Head Drive Screws: #6 #8 × 3/8-inch long, Type U, pan or round head drive screw; stainless steel material. Supply components with documentation containing dimensional and material compliance.
- **8. Debris Shield:** 1/8-inch minimum thickness × 1/2-inch wide; open cell silicone sponge rubber material. Supply component with documentation containing dimensional and material compliance.
- **9. Debris Shield Adhesive Tape:** 1/2-inch wide double-sided adhesive tape, or equivalent. Supply component with documentation containing dimensional and material configuration.
- **10. Optional Vent Port Mesh:** Type 304 stainless steel material. Supply component with documentation containing material compliance.
- **11. Optional Polyethylene Filter:** Ø1/8 inch, 7/16 inch long, polyethylene filters; General Polymeric No. GP-714,200-12A (General Polymeric Corporation, Reading Pennsylvania). Supply components with a Certificate of Conformance containing dimensional and material certification.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

ΕA	.08PT3006-1-0 QUALITY CATE	GORY ASSESSMEN	NT	Page 2	4 of 47	
Sys	stem No. PT01	Document No.	PE-04-0001	Rev	0	
Sul	bject <u>TRUPACT-II Package</u>	QCA No	15	Rev.	0	
Dra	awing No. PacTec Drawing No. 2077-500SNP (	TRUPACT-II SAR Drawin	g)	Rev	V	
ITE	M DESCRIPTION:					
	OCA/OCV COVERS AND	DEBRIS EXCLUSION COMP	ONENTS			
1.	Seal Test Port Fiberglass Tube: Sheet 4, Section	on G-G, Zone C/D-4/5				
2.	Seal Test Port Tubing: Sheet 4, Section G-G, Z	one C/D-4/5				
3.	Vent Port Fiberglass Tube: Sheet 4, Section H-	H, Zone C-2/3				
4.	<b>Vent Port Plug Handling O-ring Seal:</b> Sheet 1 Detail "OCV VENT PORT PLUG", Zone C-7	, F/N 18, Zone A-7/8; Shee	t 1, F/N 44, Zone	D-2/3/4;	Sheet 9,	
5.	Vent Port Cover: Sheet 4, Section H-H, Zone C-	3; Sheet 9, Detail "OCV VE	NT PORT COVE	R", Zone I	3/C-5/6	
6.	<b>Vent Port Cover O-ring Seal:</b> Sheet 1, F/N 18 "OCV VENT PORT COVER", Zone B/C-5/6	8, Zone A-7/8; Sheet 1, F/N	V 44, Zone D-2/3/	4; Sheet 9	), Detail	
7.	<b>Vent Port Cover Handling O-ring Seal:</b> Sheet 9, Detail "OCV VENT PORT COVER", Zone B/		eet 1, F/N 44, Zoo	ne D-2/3/4	4; Sheet	
Qu	IALITY CATEGORY:   Category A	☐ Category B	□ Category	y C		
Bas	sis:					
of t	e OCA/OCV covers and debris exclusion component these components would not release radioactive material ecting public health and safety.					
Cri	tical Characteristics:   CMTR (chemica	ls and physicals)	Other (state b	elow):		
1.	<b>Seal Test Port Fiberglass Tube:</b> Ø15%-inch, 0.0 with documentation containing dimensional and r		rglass material. S	upply con	nponent	
2.	<b>Seal Test Port Tubing:</b> Ø1½-inch, 20-gauge (6 A213, Type 304. Supply with documentation con				ASTM	
3.	Vent Port Fiberglass Tube: Ø15/8-inch, 0.06-incd documentation containing dimensional and material		s material. Supply	y compone	ent with	
4.						
5.	<b>Vent Port Cover:</b> Brass material per ASTM B containing material compliance.	316, Alloy 360, 1/2 hard te	mper. Supply wi	th docum	entation	
Prep 7 Cog	parer Do Workstown 11.19.04 mizant Manager De	ate Cognizant Engineer  QA Repyesentative	Sellu- lleanno 1	11/23/2 2-7-	Date O4 Date	

QA Représentative Date

EA08PT3006-1-	O QUALITY CATEGORY ASSESSMENT	Page 25 of 47				
System No.	PT01 Document No. <u>PE-04-0001</u>	Rev0				
<b>6.</b> Vent Port Cover O-ring Seal: Size per Parker AS-568-914 (3-914); 1.047-inch (±0.010-inch) I.D. × Ø0.116-inch ±0.004-inch; butyl rubber material per RR-0405-70, Rainier Rubber Company, or neoprene or ethylene propylene rubber material per ASTM D2000 (70, 80, or 90 Durometer). Supply component with documentation containing dimensional and material compliance.						
× Ø0.070-ince ethylene proj						

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

EA08PT3006-1-0 QUALITY CATEGORY ASSESSMENT					Page 26 of 47	
Sys	stem No	PT01	<u> </u>	Document No.	PE-04-0001	Rev0
Su	bject <u>TRU</u>	JPACT-II Pacl	cage	QCA No.	16	Rev. <u>0</u>
Dra	awing No	PacTec Draw	ving No. 2077-500SNP (T	RUPACT-II SAR Drawir	ng)	Rev. V
ITF	M DESCRIPT	LION.				
	22001111		OCA INTERNAL TEMPERA	ATURE CONTROL COMPO	ONENTS	
1.	Ceramic T		Detail AR, Zone D-3			
2.		•	il AR, Zone D-3			
3.			Sheet 1, F/N 19, Zone A-6/	7/8; Sheet 2, Detail B, Zo	one C-3	
4.	Pop Rivets	s: Sheet 1, F/N	N 37, Zone B-4/5/6; Sheet	2, Detail B, Zone C-3		
5.	Fiberglass	Insulation: S	Sheet 2, Detail B, Zone C-	3/4		
6.	Lid Angle	: Sheet 3, Deta	ail E, Zone C-5			
7.	Body Ang	le: Sheet 3, Do	etail E, Zone C-5			
8.	Seal Test I	Port Foam or	Ceramic Plug: Sheet 1, 1	F/N 4, Zone D-6/7/8; She	et 4, Section G-G,	Zone D-4/5
9.	Vent Port	Foam or Cera	amic Plug: Sheet 1, F/N	4, Zone D-6/7/8; Sheet 4,	Section H-H, Zon	ne C-2/3
Qu	IALITY CATE	GORY.	☐ Category A	☐ Category B	Categor	
	sis:	001111		Z catogoly 2		, -
red rad	uce the effe	ctiveness of the	nts, secondary in nature to be closure region thermal packaging, but only in co sely affecting public health	design and thus the conta onjunction with failure of	ainment seals, res	ulting in a release
Cri	tical Chara	cteristics:	☐ CMTR (chemicals	and physicals)	Other (state b	pelow):
1.			wide woven tape; ceram ce containing dimensional		1.1	y material with a
2.		Thermoseal compaterial comp	or RTV silicone adhesive a liance.	material. Supply materia	l with a Certificat	e of Conformance
3.	Inner Thermal Shield: Stainless steel material per ASTM A240, Type 304. The thickness of the inner thermal shield is 16-gauge (0.060-inch thick), with sheet thickness tolerances in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b. Supply material with a Certificate of Conformance containing dimensional and material compliance.					
4.			commercial pop rivets; st configuration and materia		upply material wi	th a Certificate of
5.		aterial with a	2-inch thick uncompress Certificate of Conform			
	Ha	.RL	11.19.04	Joeld C.	Sellu	11/23/04
Prep	varet VI Ca	vinin	11 · 23 · 0 · 4	AR W	lleans 1	Date 2-7-04
Cog	nizant Manage	r	Date	QA Representative		Date

EA08PT3006-1-0	QUALITY CATEGORY ASSESSMENT	Page 27 of 47

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- **6. Lid Angle:** 1-inch × 1-inch × 1/8-inch thick; stainless steel material per ASTM A276 or A479, Type 304. Supply material with a Certificate of Conformance containing configuration and material compliance.
- 7. **Body Angle:** 2-inch  $\times$  2-inch  $\times$  1/4-inch thick; stainless steel material per ASTM A276 or A479, Type 304. Supply material with a Certificate of Conformance containing configuration and material compliance.
- **8. Seal Test Port Foam or Ceramic Plug:** Foam per *Commercial Grade Dedication*, below, or ceramic fiber paper material per Lytherm No. 1535-LK (nominal 1/4-inch thickness), Lydall Technical Papers, Rochester, New Hampshire, or Fiberfrax No. 970K, Unifrax Corporation, Niagara Falls, New York. Supply material with a Certificate of Conformance containing material compliance.
- **9. Vent Port Foam or Ceramic Plug:** Foam per *Commercial Grade Dedication*, below, or ceramic fiber paper material per Lytherm No. 1535-LK (nominal 1/4-inch thickness), Lydall Technical Papers, Rochester, New Hampshire, or Fiberfrax No. 970K, Unifrax Corporation, Niagara Falls, New York. Supply material with a Certificate of Conformance containing material compliance.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

Physical Characteristics:

See Section 8.1.4.1, Polyurethane Foam, of the TRUPACT-II Safety Analysis Report.

Performance Characteristics:

See Section 8.1.4.1, *Polyurethane Foam*, of the TRUPACT-II Safety Analysis Report.

Verification Methods:

See Section 8.1.4.1, Polyurethane Foam, of the TRUPACT-II Safety Analysis Report.

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System No. PT01		Document No.	PE-04-0001	Rev0			
Subject <u>TRUPACT-II Page</u>	ackage	QCA No.	17	Rev0			
Drawing No. PacTec Dr	awing No. 2077-500SNP	(TRUPACT-II SAR Drawi	ng)	RevV			
ITEM DESCRIPTION:							
	OCA EXTERNAL TEMPE	CRATURE CONTROL COMP	ONENTS				
OCA Outer Thermal Shield: Sheet 1, F/N 19, Zone A-6/7/8; Sheet 2, Detail B, Zone B/C-2							
QUALITY CATEGORY:		☐ Category B	☐ Catego	ry C			
Basis:							
The OCA outer thermal shield is a temperature control component protecting components within the Z-flange region of the closure interface, and is required to thermally protect containment under normal conditions of transport and hypothetical accident conditions. Failure of the outer thermal shield could result in subsequent failure of the containment seals and release radioactive material from the packaging, directly resulting in a condition adversely affecting public health and safety.							
Critical Characteristics:	Critical Characteristics:   CMTR (chemicals and physicals)  Other (state below):						
OCA Outer Thermal Shield: Stainless steel material per ASTM A240, Type 304. The thickness for the outer thermal shield is 0.075-inch (14-gauge), with sheet thickness tolerances in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b.							
COMMERCIAL GRADE DED	ICATION: (SUMMARIZE CHA	ARACTERISTICS)					
N/A							

Preparer Date

Told C. Sellm 11/23/04

Cognizant Engineer Date

Cognizant Manager Date

OA Representative Date

ΕA	08PT3006-1-0	QUALITY CATEG	ORY ASSESSME	NT	Page 2	29 of 47
Sys	stem No. PT01		Document No.	PE-04-0001	Rev	0
Su	oject <u>TRUPACT-II Packa</u> g	e	QCA No.	18	Rev.	0
Dra	awing No. <u>PacTec Drawing</u>	g No. 2077-500SNP (TI	RUPACT-II SAR Drawi	ng)	Rev.	V
ITE	M DESCRIPTION:					
			BLE VENT COMPONENT			
1.	Weld Flange: Sheet 2, Det Zone D-7; Sheet 5, Section S		KAGING", Zone A/B-7	and C/D-6/7; Shee	et 5, Sect	ion Z-Z,
2.	<b>Pipe Plug:</b> Sheet 2, Detail Zone D-7; Sheet 5, Section S		AGING", Zone A/B-7	and C/D-6/7; Shee	t 5, Secti	ion Z-Z,
		OCA FOAM FILL	PORT COMPONENTS			
1.	<b>Doubler Plate:</b> Sheet 5, Section	on K-K, Zone D-7; Sheet	5, Section Z-Z, Zone D-7	; Sheet 6, Section AA	A-AA, Zo	ne B-3/4
2.	<b>Cover Plate:</b> Sheet 5, Section	K-K, Zone D-7; Sheet 5,	Section Z-Z, Zone D-7; S	heet 6, Section AA-	AA, Zone	B-3/4
Qu	ALITY CATEGORY:	Category A	□ Category B	☐ Category	/ C	
Ba	sis:					
but hea	he polyurethane foam. Failu would reduce the effectiven lth and safety.	ess of the packaging, in	ndirectly resulting in a d		affecting	
OII		- ,	ABLE VENT COMPONENT		Ciow).	
1.	Weld Flange: 1½-inch NI Conformance containing con	PT weld flange; stainle	ss steel material. Supp		a Certi	ficate of
2.	_	Γ flush pipe plug; pla	astic material. Supply	component with	a Certif	icate of
	Č	-	•			
1.	OCA FOAM FILL PORT COMPONENTS  Doubler Plate: 1/4-inch thick plate; stainless steel material per ASTM A240, Type 304. The minimum thickness for 1/4-inch nominal thickness material is 0.240-inch, and the maximum thickness is in accordance with Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b. Supply material with a Certified Material Test Report (CMTR) containing chemical and physical properties.					
2.	Cover Plate: 1/4-inch thick 1/4-inch nominal thickness m ASTM A480-95a or A2.17 containing chemical and phys	aterial is 0.240-inch, and of ASTM A480-99b.	the maximum thickness	is in accordance wit	h Table A	<b>A</b> 1.17 of
Co N/A	MMERCIAL GRADE DEDICATION	DN: (SUMMARIZE CHARA	ACTERISTICS)			

Preparer Date

Toold C. Sellm 11/23/04

Cognizant Engineer Date

Cognizant Manager Date

OA Representative Date

EA08PT3006-1-0 <b>C</b>	UALITY CATEGORY ASSE	SSMEN	Т	Page 30	of 47
System No. PT01	Docum	ent No	PE-04-0001	Rev.	0
Subject <u>TRUPACT-II Package</u>	Q	CA No	19	Rev	0
Drawing No. <u>PacTec Drawing</u>	No. 2077-500SNP (TRUPACT-II SA	R Drawing	<u>(</u> )	Rev	V
ITEM DESCRIPTION:					
	CERAMIC FIBER PAPER				
D, Option 1, Zone D-7; Sheet 3, I 6; Sheet 3, Detail N, Zone A/B-5 Section H-H, Zone C/D-2/3; Sheet	Sheet 2, Detail B, Zone B/C/D-2/3; Spetail E, Zone B/C-5; Sheet 3, Detail I S; Sheet 3, Detail P, Zone A/B-4; Sheet 5, Section AD-AD, Zone A/B-7/8; Section Z-Z, Zone D-7; Sheet 6, Section Z-	L, Zone B/G neet 4, Sect Sheet 5, S	C-5; Sheet 3, Deta tion G-G, Zone C ection AJ-AJ, Zone	il M, Zon /D-4/5; S ne C-5; S	heet 4, sheet 5,
QUALITY CATEGORY:	Category A	у В	☐ Category	С	
Basis:					
polyurethane from being consume material could cause a failure of t	l is a temperature control component ed in the hypothetical accident condit the polyurethane foam and result in su the packaging, directly resulting in a co	tion fire. I	Failure of the ceralilure of the conta	amic fiber	r paper als and
Critical Characteristics:	CMTR (chemicals and physicals	) <u></u>	Other (state be	elow):	
Rochester, New Hampshire, or Fi shall be acceptable if continuous or reduce the material's effectiveness	Lytherm No. 1535-LK (nominal 1/sberfrax No. 970K, Unifrax Corporation lirect exposure to a 800 °C (1,475 °F) is as a thermal barrier, i.e., physically indeededication based on the critical characteristics.	ion, Niagar thermal en intact. If a	ra Falls, New Yor vironment for 30 i Quality Level A v	k. The n	naterial oes not
COMMERCIAL GRADE DEDICATION	N: (SUMMARIZE CHARACTERISTICS)				
Physical Characteristics:					
See Critical Characteristics, abov	e.				
Performance Characteristics:					
See Critical Characteristics, abov	e.				
Verification Methods:					
See Critical Characteristics, abov	e.				

Preparer

Date

Cognizant Manager

Date

11.19.04

11.19.04

Date

Cognizant Engineer

Date

OA Representative

Date

EA08PT3006-1-0	QUALITY CATE	GORY ASSESSMEN	IT	Page 3	1 of 47		
System No. PT01		Document No	PE-04-0001	Rev.	0		
Subject TRUPACT-II Pag	ckage	QCA No	20	Rev.	0		
Drawing No. PacTec Dra	wing No. 2077-500SNP	(TRUPACT-II SAR Drawin	g)	Rev	V		
ITEM DESCRIPTION:							
	Polyu	URETHANE FOAM					
Sheet 1, F/N 4, Zone D-6/7/8	; Sheet 2, "TRUPACT-I	I PACKAGING", Zone A/B	-5/6/7				
QUALITY CATEGORY:		☐ Category B	☐ Categor	у С			
Basis:							
The polyurethane foam is required to maintain containment by directly protecting the containment seals under normal conditions of transport and hypothetical accident conditions. Failure of the polyurethane foam could cause a failure of the containment seals and release radioactive material from the packaging, directly resulting in a condition adversely affecting public health and safety.							
Critical Characteristics:	☐ CMTR (chemica	als and physicals)	Other (state	below):			
The rigid polyurethane foam material shall meet the chemical, physical, and performance requirements specified in Section 8.1.4.1, <i>Polyurethane Foam</i> , of the TRUPACT-II Safety Analysis Report. If a Quality Level A vendor cannot be qualified, perform commercial grade dedication based on the critical characteristics.							
COMMERCIAL GRADE DEDIC	ATION: (SUMMARIZE CHA	ARACTERISTICS)					
Physical Characteristics:							
See Section 8.1.4.1, Polyurer	thane Foam, of the TRUI	PACT-II Safety Analysis Re	port.				
Performance Characteristi	cs:						
See Section 8.1.4.1, Polyurei	thane Foam, of the TRUI	PACT-II Safety Analysis Re	port.				
Verification Methods:							
See Section 8.1.4.1, Polyurer	thane Foam, of the TRU	PACT-II Safety Analysis Re	port.				

Preparer Date

Date Cognizant Engineer Date

Cognizant Manager Date

11.19.04

11.19.04

Date Cognizant Engineer Date

OA Reppesentative Date

ΕA	A08PT3006-1-0 QUALITY CA	TEGORY ASSESSMENT	Page 32 of 47
Sy	estem No. PT01	Document No. PE-04-00	001 Rev. 0
Su	ıbject <u>TRUPACT-II Package</u>	QCA No21	Rev0
Dra	awing No. PacTec Drawing No. 2077-500SN	NP (TRUPACT-II SAR Drawing)	Rev. <u>V</u>
İTE	EM DESCRIPTION:		
	ICV LID	CLOSURE COMPONENTS	
1.	<b>Optional Internal Thread Insert:</b> Sheet 3, S	Section F-F, Zone C-3	
2.	<b>Lock Bolt Weldment:</b> Sheet 3, Section WELDMENT", Zone B-1/2	F-F, Zone C-3; Sheet 9, Detail "OC	CV/ICV LOCK BOLT
3.	Locking Ring Pins: Sheet 8, View Y-Y, Zor	ne D-2/3	
	OCA LID	CLOSURE COMPONENTS	
1.	Round Bar: Sheet 3, Detail E, Zone C-5		
2.	<b>Internal Thread Insert:</b> Sheet 3, Detail E, Z	one C-5	
3.	<b>Lock Bolt Weldment:</b> Sheet 3, Detail E, Z WELDMENT", Zone B-1/2; Sheet 9, Detail "		
4.	Locking Ring Pins: Sheet 8, View AW-AW	, Zone B/C-2/3	
5.	Pan Head Screws: Sheet 6, Detail U, Zone C	C-6/7	
Qι	JALITY CATEGORY:   Category A	☐ Category B ☐ Ca	tegory C
Ва	asis:		
tra	ne ICV and OCV lid closure components are insport and hypothetical accident conditions. Iterial from the packaging, directly resulting in a	Failure of the lid closure components co	ould release radioactive
Cri	itical Characteristics:   CMTR (chem	nicals and physicals)	state below):
	ICV Lid	CLOSURE COMPONENTS	
1.	<b>Optional Internal Thread Insert:</b> 1/2-13U equivalent. Supply components with a Cecertification.	NC; Tridair KN813J, Fairchild Fasteners, ertificate of Conformance containing con	
2.	<b>Lock Bolt Weldment:</b> Socket head cap scre O.D. × 11-gauge (0.120-inch wall), seamles with a Certificate of Conformance containing	s tubing; Type 304 stainless steel materia	
3.	<b>Locking Ring Pins:</b> Stainless steel materia with a Certified Material Test Report (CMTR		

Preparer
Date

11.19.04

11.19.04

Date

Cognizant Engineer

Date

OA Representative

Date

EA08PT3006-1-0		QUALITY CATEGORY ASSESSME	Page 33 of 47		
System No.	PT01	_ Document No.	PE-04-0001	Rev.	0

**1. Round Bar:** Stainless steel material per ASTM A276 or A479, Type 304. Supply material with a Certified Material Test Report (CMTR) containing chemical and physical properties.

**OCA LID CLOSURE COMPONENTS** 

- **2. Internal Thread Insert:** 1/2-13UNC; Tridair KN813J, Fairchild Fasteners, Torrance, California, or equivalent. Supply components with a Certificate of Conformance containing configuration and material certification.
- **3. Lock Bolt Weldment (Optional):** Socket head cap screw, 1/2-13UNC, 1-inch long; 18-8 stainless steel material, and, 5/8-inch O.D. × 18-gauge (0.048-inch wall), seamless tubing; Type 304 stainless steel material. Supply components with a Certificate of Conformance containing configuration and material certification.
- **4. Locking Ring Pins:** Stainless steel material per ASTM A564, Type 630, Condition 1150. Supply material with a Certified Material Test Report (CMTR) containing chemical and physical properties.
- **5. Pan Head Screws:** Pan head screw, 1/4-20UNC or 1/4-28UNF, 3/8-inch long; 18-8 stainless steel material. Supply components with a Certificate of Conformance containing configuration certification and material properties.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

EΑ	EA08PT3006-1-0 QUALITY CATEGORY ASSESSM	ENT	Page 34 of 47					
Sy	System No. PT01 Document No	. <u>PE-04-0001</u>	Rev. 0					
Su	Subject TRUPACT-II Package QCA No	ubject TRUPACT-II Package QCA No. 22 Rev. 0						
Dra	Drawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Draw	ving)	Rev. V					
ITE	TEM DESCRIPTION:							
	ICV VENT PORT COMPONENTS							
1.	1. Vent Port Insert: Sheet 4, Section J-J, Zone C-7; Sheet 10, Detail "ICV 7/8; Sheet 10, Detail "OPTIONAL ICV VENT PORT INSERT", Zone C/I		ERT", Zone C/D-					
2.	2. Outer Vent Port Plug: Sheet 4, Section J-J, Zone C-7; Sheet 10, Detail Zone B-1/2/3	"ICV OUTER VEN	NT PORT PLUG",					
	OCV VENT PORT COMPONENTS							
1.	1. Vent Port Coupling (Inboard): Sheet 4, Section H-H, Zone C-3; S COUPLING (INBOARD)", Zone B-6/7	Sheet 9, Detail "O	CV VENT PORT					
2.	2. Vent Port Fitting: Sheet 4, Section H-H, Zone C-3; Sheet 9, Detail "OCV VI	ENT PORT FITTING	G", Zone C/D-3/4					
3.	3. Vent Port Plug: Sheet 4, Section H-H, Zone C-3; Sheet 9, Detail "OCV V	VENT PORT PLUG	", Zone C-6/7/8					
Qι	QUALITY CATEGORY:   Category A Category B	Categor	ry C					
Ва	Basis:							
anc	The ICV and OCV vent port components are required to maintain containment and hypothetical accident conditions. Failure of the vent port components combe packaging, directly resulting in a condition adversely affecting public health	ould release radioac						
Cri	Critical Characteristics:   CMTR (chemicals and physicals)	Other (state I	below):					
	ICV VENT PORT COMPONENTS							
1.	1. Vent Port Insert: Stainless steel material per ASTM A479, Type 304.							
2.	2. Outer Vent Port Plug: Brass material per ASTM B10 or ASTM B16, Al	loy 360, 1/2 hard ter	mper.					
	OCV VENT PORT COMPONENTS							
1.	1. Vent Port Coupling (Inboard): Stainless steel material per ASTM A479	, Type 304.						
2.	2. Vent Port Fitting: Stainless steel material per ASTM A479, Type 304.							
3.	3. Vent Port Plug: Brass material per ASTM B10 or ASTM B16, Alloy 360	), 1/2 hard temper.						
Cc	COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)							
N/	N/A							

Preparer Date

Told C. Sellm 11/23/04

Cognizant Manager Date

11.19.04

11.19.04

Date

OA Representative Date

ΕA	08PT3006-1-0 <b>Q</b> L	JALITY CATEGORY ASSES	SME	NT	Page 3	5 of 47
Sy	stem No. PT01	Documer	nt No.	PE-04-0001	Rev	0
Su	bject TRUPACT-II Package	QC/	A No.	23	Rev	0
Dra	awing No. PacTec Drawing N	o. 2077-500SNP (TRUPACT-II SAR	Drawii	ng)	Rev	V
ITE	EM DESCRIPTION:					
		ICV SEAL TEST PORT COMPONE	NTS			
1.		Section AK-AK, Zone B-7; Sheet 9, De 3; Sheet 9, Detail "OPTION 2, OCV & IC				
2.	<b>Seal Test Port Plug:</b> Sheet 4, Se Zone A-6/7/8	ction AK-AK, Zone B-6/7; Sheet 9, Deta	ail "OC	V & ICV SEAL TES	ST PORT	PLUG",
3.	Seal Test Port Plug O-ring Se "OCV & ICV SEAL TEST POR	<b>cal:</b> Sheet 1, F/N 18, Zone A-7/8; She Γ PLUG", Zone A-6/7/8	eet 1, F	/N 44, Zone D-2/3	/4; Sheet 9	9, Detail
		OCV SEAL TEST PORT COMPONE	ENTS			
1.		Section G-G, Zone C/D-5; Sheet 9, De 8/8; Sheet 9, Detail "OPTION 2, OCV 8/9				
2.	<b>Seal Test Port Plug:</b> Sheet 4, S Zone A-6/7/8	ection G-G, Zone C/D-5; Sheet 9, Deta	ail "OC"	V & ICV SEAL TES	ST PORT	PLUG",
3.	Seal Test Port Plug O-ring Se "OCV & ICV SEAL TEST POR	<b>cal:</b> Sheet 1, F/N 18, Zone A-7/8; She Γ PLUG", Zone A-6/7/8	eet 1, F	/N 44, Zone D-2/3/	/4; Sheet 9	9, Detail
QL	JALITY CATEGORY:	Category A	В	☐ Category	/ C	
Ва	sis:					
cor	ntainment seal for normal cond ovide a secondary level of conta	t components are utilized to demonitions of transport and hypothetical imment protection. Failure of the secretly resulting in a condition adversely	accide eal test	ent conditions. The port components	nese com could red	ponents uce the
Cri	itical Characteristics:	CMTR (chemicals and physicals)		☑ Other (state b	elow):	
		ICV SEAL TEST PORT COMPONE	NTS			
1.	<b>Seal Test Port Insert:</b> Stair Certificate of Conformance conf	aless steel material per ASTM A479 raining material certification.	9, Тур	e 304. Supply co	mponents	with a
2.	<b>Seal Test Port Plug:</b> Brass m Certificate of Conformance conf	naterial per ASTM B16, Alloy 360, 1/vaining material certification.	/2 hard	temper. Supply co	omponents	s with a
3.	Ø0.072-inch ±0.003-inch; but Washington, or neoprene or et	<b>Seal:</b> Size per Parker AS-568-905 tyl rubber material per RR-0405-hylene propylene rubber material per ficate of Conformance containing dime	70, R ASTM	ainier Rubber Co I D2000 (70, 80, o	ompany, r 90 Durc	Seattle,
	/μ Λ.s					

Preparer

Date

Date

Cognizant Manager

Date

11.19.04

11.19.04

Date

Cognizant Engineer

Date

OA Representative

Date

EA08PT3006-1-0		QUALITY CATEGORY ASSESSMENT		Page 36 of 47	
Sy	stem No. PT01	 OCV SEAL TEST POR	Document No. PE-04-0001 RT COMPONENTS	Rev0	
1.	<b>. Seal Test Port Insert:</b> Stainless steel material per ASTM A479, Type 304. Supply components with a Certificate of Conformance containing material certification.				
2.	<b>Seal Test Port Plug:</b> Brass material per ASTM B16, Alloy 360, 1/2 hard temper. Supply components with a Certificate of Conformance containing material certification.				
3.	Ø0.072-inch ±0.003-inc Washington, or neopren	ch; butyl rubber material pe e or ethylene propylene rubber	AS-568-905 (3-905); 0.414-inch (er RR-0405-70, Rainier Rubber material per ASTM D2000 (70, 80 ntaining dimensional and material containing dimensional and dimensional	Company, Seattle, o, or 90 Durometer).	

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

ΕA	08PT3006-1-0 <b>QUALITY</b> (	CATEGORY ASSESSME	NT	Page 37 of 47	
Sy	stem No. PT01	Document No.	PE-04-0001	Rev0	
Su	bject TRUPACT-II Package	QCA No.	24	Rev0	
Dra	awing No. PacTec Drawing No. 2077-50	OSNP (TRUPACT-II SAR Drawi	ng)	Rev V	
İTE	M DESCRIPTION:				
	ICV	LID LIFTING COMPONENTS			
1.	<b>Pipe:</b> Sheet 5, Section AB-AB, Zone B-5/	/6			
2.	<b>Plate:</b> Sheet 1, F/N 19, Zone A-6/7/8; Shee	et 5, Section AB-AB, Zone B-5/6			
3.	Round Bar: Sheet 5, Section AC-AC, Zo	ne B-3/4			
4.	<b>Doubler Plate:</b> Sheet 1, F/N 19, Zone A-6.	77/8; Sheet 5, Section AB-AB, Zon	ne B-5/6		
Qι	JALITY CATEGORY:   Category	A Category B	☐ Catego	ry C	
Ва	sis:				
uno	e ICV lid lift pocket components are a prim der normal conditions of transport and hy mponents could release radioactive materi ecting public health and safety.	pothetical accident conditions.	Failure of the I	CV lid lift pocket	
Cri	itical Characteristics: 🛛 CMTR (ch	nemicals and physicals)	∴ Other (state)	below):	
1.	<b>Pipe:</b> Ø4-inch nominal, Schedule 80, p Supply material with a Certificate of Confe			A376, Type 304.	
2.	<b>Plate:</b> 1/4-inch thick plate; stainless steel material per ASTM A240, Type 304. The minimum thickness for 1/4-inch nominal thickness material is 0.240-inch, and the maximum thickness is in accordance with Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b.				
3.	Round Bar: Stainless steel material per A	ASTM A479, Type 304.			
4.	* ***				
_					

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

Preparer

Date

Cognizant Manager

Date

11.19.04

11.19.04

Date

Cognizant Engineer

Date

OA Representative

Date

ΕA	08PT3006-1-0	QUALITY CATEGORY ASSESSME	NT	Page 38 of 47			
Sys	stem No. PT01	Document No.	PE-04-0001	Rev. <u>0</u>			
Su	oject <u>TRUPACT-II Packa</u> g	ge QCA No.	25	Rev0			
Dra	wing No. PacTec Drawin	g No. 2077-500SNP (TRUPACT-II SAR Drawi	ng)	Rev. V			
ITE	M DESCRIPTION:						
		OCA LID LIFTING COMPONENTS					
1.	Lifting Straps: Sheet 1, F/N	N 19, Zone A-6/7/8; Sheet 5, Section AD-AD, Zo	one A/B-7				
2.	<b>Doubler Plate:</b> Sheet 1, F/N	N 19, Zone A-6/7/8; Sheet 5, Section AG-AG, Zo	one B/C-7				
3.	Round Bar: Sheet 5, View	AE-AE, Zone A/B-6					
		PACKAGING LIFTING COMPONENTS					
1.	Fork Lift Pocket: Sheet 1,	F/N 19, Zone A-6/7/8; Sheet 6, Section AA-AA,	Zone B-2				
_							
	ALITY CATEGORY: [	☐ Category A ☐ Category B	☐ Categor	y C			
	sis:						
OC		iting components are used for package handling ould reduce the effectiveness of the packaging and safety.					
Cri	ical Characteristics:		Other (state b	pelow):			
		OCA LID LIFTING COMPONENTS					
1.	A479, Type 304. The mini	nick; stainless steel material per ASTM A240, T mum thickness for 1/4-inch nominal thickness, a accordance with Table A1.17 of ASTM A480-	ASTM A240 mate	rial is 0.240-inch;			
2.	<b>Doubler Plate:</b> 1/4-inch thick; stainless steel material per ASTM A240, Type 304. The minimum thickness for 1/4-inch nominal thickness material is 0.240-inch; the maximum thickness is in accordance with Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b.						
3.	Round Bar: Stainless steel	material per ASTM A479, Type 304.					
	PACKAGING LIFTING COMPONENTS						
1.	<b>Fork Lift Pocket:</b> 3/16-inch thick; stainless steel material per ASTM A240, Type 304. The minimum thickness for 3/16-inch nominal thickness material is 0.178-inch; the maximum thickness is in accordance with Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b.						
 Cი	MMERCIAL GRADE DEDICATI	ON: (SUMMARIZE CHARACTERISTICS)					
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- 1/ 1	-						

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ΕA	.08PT3006-1-0	QUALITY CATE	GORY ASSESSMEN	NT	Page 3	9 of 47
Sy	stem No. PT01		Document No	PE-04-0001	Rev	0
Su	bject <u>TRUPACT-II Packa</u>	ge	QCA No	26	Rev.	0
Dra	awing No. PacTec Drawin	ng No. 2077-500SNP (T	RUPACT-II SAR Drawin	g)	Rev.	V
ITE	M DESCRIPTION:					
		TIE-DOW!	N COMPONENTS			
1.	Tie-down Lug: Sheet 2, "TIE-DOWN LUG", Zone		GING", Zone A-6/7; Shee	t 5, View R-R, Z	Sone D-3;	Sheet 5,
2.	Side Doubler Plate: Sheet	1, F/N 19, Zone A-6/7/8	; Sheet 5, View R-R, Zone	e D-3/4		
3.	Gusset: Sheet 1, F/N 19, Zon C-3	e A-6/7/8; Sheet 11, Secti	on T-T, Option 1, Zone C-6;	Sheet 11, Section	Γ-T, Optior	2, Zone
4.	<b>Bottom Doubler Plate:</b> She Section T-T, Option 2, Zone		/7/8; Sheet 11, Section T-T	, Option 1, Zone	C/D-6/7; S	heet 11,
5.	<b>Bottom Tripler Plate:</b> She BE-BE, Zone B-2/3	eet 1, F/N 19, Zone A-6/	7/8; Sheet 11, Section BD-	BD, Zone A-6/7;	Sheet 11,	Section
Qu	JALITY CATEGORY:	Category A		☐ Categor	у С	
Ва	sis:					
cor	e packaging tie-down components could reduce the efckaging, but only in conjunculting in a condition adversel	ffectiveness of the pack etion with failure of oth	aging and resulting in a re ner packaging structural a	lease radioactive	material f	rom the
Cri	tical Characteristics:		and physicals)	Other (state b	pelow):	
1.	Tie-down Lug: Stainless s	teel material per ASTM	I A240 or ASTM A479, T	ype 304.		
2.	<b>Side Doubler Plate:</b> 3/8-in The minimum thickness for accordance with Table A1.1	r 3/8-inch nominal thick	ness material is 0.365-incl	h, and the maxim		
3.	<b>Gusset:</b> 1/4-inch thick plate inch nominal thickness mate ASTM A480-95a or A2.17	erial is 0.240-inch, and				
4.	Bottom Doubler Plate: minimum thickness for 1/4 accordance with Table A1.1	4-inch nominal thickne	ss material is 0.240-inch,	and the maximu		
5.	<b>Bottom Tripler Plate:</b> 1/ Thickness tolerances are in					
Co N/A	MMERCIAL GRADE DEDICATI	ON: (SUMMARIZE CHAF	RACTERISTICS)			

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Toll C. Selln 11/23/04

Cognizant Engineer

Date

Ognizant Manager

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EA08PT3006-1-0	QUALITY CATE	GORY ASSESSME	NT	Page 40 of 47		
System No. PT01	_	Document No.	PE-04-0001	Rev0		
Subject TRUPACT-II Pac	kage	QCA No.	27	Rev0		
Drawing No. PacTec Drav	ving No. 2077-500SNP (	TRUPACT-II SAR Drawir	ng)	RevV		
ITEM DESCRIPTION:						
	WELD F	ILLER MATERIAL				
Various locations throughout	most drawing sheets					
QUALITY CATEGORY:	□ Category A	☐ Category B	☐ Category	С		
Basis:						
Weld filler material comprises portions of the containment structures, and is required to maintain containment under normal conditions of transport and hypothetical accident conditions. Failure of weld filler material could release radioactive material from the packaging, directly resulting in a condition adversely affecting public health and safety. Since control of weld filler material between containment vessel and non-containment vessel components is difficult to implement at best, all weld filler material is Category A.						
Critical Characteristics:   CMTR (chemicals and physicals)  Other (state below):						
Compatible material with Type 304 stainless steel.						
COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)						
N/A						

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Date

11.19.04

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Cognizant Manager

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Ognizant Manager

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EA	A08PT3006-1-0 QUALITY CATEGORY AS:	SESSMENT	Page 41 of 47		
Sys	vstem No. PT01 Docu	ument No. <u>PE-04-0001</u>	Rev0		
Sul	ubject TRUPACT-II Package	QCA No28	Rev0		
Dra	rawing No. PacTec Drawing No. 2077-500SNP (TRUPACT-II)	SAR Drawing)	Rev. V		
İTE	EM DESCRIPTION:				
	ICV MISCELLANEOUS COM	PONENTS			
1.	<b>Flat or Pan/Round Head Screw:</b> Sheet 3, Detail D, Option 1, 5; Sheet 6, Detail V, Option 1, Zone B-7; Sheet 6, Detail V, Option 1, Zone B-7; Sheet 6, Detail V, Option 1, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Detail V, Option 3, Zone B-7; Sheet 6, Zone B-7; Shee		Option 2, Zone D-		
2.	<b>Flat Washer:</b> Sheet 3, Detail D, Option 1, Zone D-7; Sheet 3, I Option 1, Zone B-7; Sheet 6, Detail V, Option 2, Zone B-5	Detail D, Option 2, Zone D-5;	Sheet 6, Detail V,		
3.	<b>U-Type Fastener:</b> Sheet 3, Detail D, Option 1, Zone D-7; Sl Detail V, Option 1, Zone B-7; Sheet 6, Detail V, Option 1, Zone		one D-5; Sheet 6,		
4.	Locking Ring Stop Plate: Sheet 1, F/N 19, Zone A-6/7/8; Sheet	8, Section AX-AX, Zone A-6			
Qu	JALITY CATEGORY: Category A Categ	gory B 🛛 Categor	y C		
Bas	asis:				
rota Fail	the ICV miscellaneous components are used for securing the upper tation of the ICV locking ring. Furthermore, these components a ilure of these components would not release radioactive material versely affecting public health and safety.	are optional and have no sign	ificance to safety.		
Cri	itical Characteristics:	als) 🛛 Other (state b	pelow):		
1.	<b>Flat or Pan/Round Head Screw:</b> Flat, pan, or round head screw with documentation containing configuration compliance.	y, 1/4-20UNC, 3/4-inch long. S	supply components		
2.	<b>Flat Washer:</b> Flat washer, 5/16-inch nominal size. Suppl configuration compliance.	y components with documer	ntation containing		
3.	<b>U-Type Fastener:</b> U-type fastener for 1/4-20UNC threads, 1/8 components with documentation containing configuration complete.		ch throat. Supply		
4.	Locking Ring Stop Plate: Stainless steel material per ASTM A240, Type 304. The thickness of the locking ring stop plate is 12-gauge (0.105-inch thick), with sheet thickness tolerances in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b. Supply material with documentation containing dimensional and material compliance.				
Со	DMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS	s)			
N/A	A				

Preparer

Date

11.19.04

Date

Cognizant Manager

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EA	.08PT3006-1-0	QUALITY CATEGO	ORY ASSESSMEI	NT	Page 4	2 of 47
Sys	stem No. PT01		Document No.	PE-04-0001	Rev	0
Sul	bject <u>TRUPACT-II Pa</u>	ckage	QCA No.	29	Rev	0
Dra	awing No. PacTec Dra	awing No. 2077-500SNP (TRU	UPACT-II SAR Drawin	g)	Rev	V
İTE	м Description:					
		OCA MISCELLANI	EOUS COMPONENTS			
1.	Silicone Wear Pad: Sl	heet 1, F/N 41, Zone A-4/5/6;	Sheet 2, "TRUPACT-II	PACKAGING",	Zone A-6	/7
2.	Nameplates: Sheet 1, 1	F/N 3, Zone D-6/7/8; Sheet 2,	"TRUPACT-II PACK	AGING", Zone D-6	5	
3.	Label: Sheet 1, F/N 46	5, Zone C/D-3/4; Sheet 2, "TR	UPACT-II PACKAGIN	NG", Zone A/B-5 a	nd Zone	A/B-7
4.	<b>Optional Shipping Lab</b> B-7	el Holder: Sheet 1, F/N 55, Zo	one A/B-2/3/4; Sheet 2, "	TRUPACT-II PAC	KAGINC	ì", Zone
5.	<b>Optional Annulus Foa</b>	m Ring: Sheet 2, Detail B, Z	one C-3			
6.	<b>Optional Guide Plate:</b>	Sheet 1, F/N 19, Zone A-6/7/8	3; Sheet 6, Detail U, Zor	ne C-7		
7.	Optional Pan Head Sc	rew: Sheet 6, Detail U, Zone	C-7			
8.	Optional Locking Ring	g Stop Plate: Sheet 1, F/N 19	Zone A-6/7/8; Sheet 8,	Section AY-AY, Z	Zone A-5	
9.	Optional Paint: Sheet	1, G/N 25, Zone D-4/5/6				
Qu	ALITY CATEGORY:	☐ Category A	☐ Category B		, C	
Bas	sis:					
pac bod stop	ekaging, preventing debri ly, and limiting rotation of p plates are optional and h	omponents are used for reduction from entering the annulus but the OCV locking ring. Furnave no significance to safety, resulting in no condition advantage.	between the ICV and C thermore, the guide plate Failure of these compo	CV, guiding the Ce, pan head screws, nents would not re	OCA lid of and lock	onto the ing ring
Cri	tical Characteristics:	☐ CMTR (chemicals a	nd physicals)	Other (state be	elow):	
1.		1/8-inch thick with optional y material with documentation				silicone
2.		high characters, minimum; stand material compliance.	ainless steel material. S	Supply material wit	th docum	entation
3.	<b>Labels:</b> Any commerce compliance.	cially available labels. Suppl	y material with docur	nentation containi	ng config	guration
4.	Optional Shipping Lab material compliance.	bel Holder: Stainless steel r	material. Supply mater	rial with documen	tation co	ntaining
5.		am Ring: Esterfoam rubber ng material compliance.	material per MIL-P-2	6514-C200. Supp	oly mater	ial with
	1. 0					
	the till	11-19-04	Toold C.	Sellin	11/23/	34
Prep	parer	Date 11 · 23 · 0 · 4	Cognizant Engineer	01		Date
Coo	nizant Manager	71 · 73 · 64  Date	OA Representative	lleans 1.	2-7-	04 Date
208		Duit	g.i representative			Duic

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- **6. Optional Guide Plate:** 7-gauge (3/16-inch thick); stainless steel material per ASTM A240, Type 304. The minimum thickness for 3/16-inch nominal thickness material is 0.178-inch; the maximum thickness is in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b for sheet material, or Table A1.17 of ASTM A480-95a or A2.17 of ASTM A480-99b for plate material.
- 7. **Optional Pan Head Screw:** Pan head screw, 10-24UNC or 10-32UNF, 1/2-inch long; stainless steel material. Supply material with documentation containing configuration and material compliance.
- **8. Optional Locking Ring Stop Plate:** Stainless steel material per ASTM A240, Type 304. The thickness of the locking ring stop plate is 12-gauge (0.105-inch thick), with sheet thickness tolerances in accordance with Table A1.2 of ASTM A480-95a or A2.13 of ASTM A480-99b. Supply material with documentation containing dimensional and material compliance.
- **9. Optional Paint:** Any commercially available low-halogen paint. Supply material with documentation containing material compliance.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

ΕA	08PT3006-1-0	QUALITY CATEGO	ORY ASSESSMEN	NT	Page 4	4 of 47
Sys	stem No. PT01	_	Document No	PE-04-0001	Rev	0
Sul	oject <u>TRUPACT-II Pack</u>	tage	QCA No	30	Rev	0
Dra	awing No. <u>PacTec Draw</u>	ring No. 2077-500SNP (TR	UPACT-II SAR Drawin	g)	Rev.	V
İTE	M DESCRIPTION:					
		MISCELLANEOUS EX	TERNAL COMPONENTS			
1.		s: Sheet 1, F/N 20, Zone A/C-4/5; Sheet 4, View AL-A		ACT-II PACKAG	ING", Zoi	ne D-6;
2.		Wires: Sheet 1, F/N 20, Zone B/C-4/5; Sheet 4, View		RUPACT-II PACI	KAGING'	", Zone
3.	Hex Head Cap Screw: S	Sheet 4, Section H-H, Zone	C-2			
4.	Round Tubing: Sheet 5,	Section AD-AD, Zone B-7	7			
5.	Hex Head Cap Screws a	nd Lock Washers: Sheet	5, View AE-AE, Zone A	/B-5/6		
6.	Covers, Lanyards, and S	Spring Clips: Sheet 5, Sec	tion AD-AD, Zone B-7			
7.	Cover Plates: Sheet 5, D	Detail BB, Zone C-3/4				
8.	Round Bars: Sheet 5, Se	ection BC-BC, Zone C-2				
9.	<b>Optional Internal Threa</b>	d Inserts: Sheet 5, Section	n BC-BC, Zone C-2			
10.	Pan Head Screws and Fl	lat Washers: Sheet 5, Sect	tion BC-BC, Zone C-2			
Qu	ALITY CATEGORY:	☐ Category A	☐ Category B		С	
Bas	sis:					
tran		l components are each assumponents would not release public health and safety.				
Cri	tical Characteristics:	☐ CMTR (chemicals a	and physicals)	Other (state be	elow):	
1.		s: Use any commercially a upply component with docu				patible
2.		Wires: Use any commercial upply component with document wi				patible
3.		Hex head cap screw, 1/2 ntation containing configura			naterial.	Supply
4.		ch O.D. × 4-inch I.D.; fig dimensional and material of	_	quivalent. Suppl	y materia	al with
5.						
6.	Covers, Lanyards, and appropriate) and material	<b>Spring Clips:</b> Supply compliance.	omponents with docume	ntation containing	dimensio	onal (if
	a. Covers: 5-inch I.D.; plastic, aluminum, or stainless steel material.					
	A tolk	11-19-04	Joeld C.	Sella	11/23/0	4
Prep	word Cavinia	Date 11 • 23 • 0 <del>4</del>	Cognizant Engineer	llamo 1	2-7	Date
Cog	nizant Manager	Date	QA Representative	CCCOMEN 1	- /-	Date

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Sy	stem No. I	T01	Doc	ument No	PE-04-0001	Rev(	)
	b. Lanyards: Use any commercially available material.						
	c. Spring Clips: Configured to fit onto a Ø7/8-inch bar; use any commercially available material.						
7.		14-gauge (0.075-inch thick) ent with documentation cont				ss steel mate	erial.
8.		Stainless steel material compliant	-	or A479, Ty	pe 304. Supply	y material	with

**9. Optional Internal Thread Inserts:** 1/4-20UNC; Tridair KN420J, Fairchild Fasteners, Torrance, California, or equivalent. Supply components with documentation containing configuration and material compliance.

**10. Pan Head Screws and Flat Washers:** Pan head screw, 1/4-20UNC, 1/2-inch long; 1/4-inch flat washer; 18-8 stainless steel material. Supply components with documentation containing configuration and material compliance.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A

ΕA	08PT3006-1-0	QUALITY CATE	GORY ASSESSMEI	NT	Page 46 of 47		
Svs	stem No. PT01		Document No.	PE-04-0001	Rev. 0		
-	-			_	Rev. 0		
	Subject <u>TRUPACT-II Package</u> QCA No. <u>31</u> Drawing No. <u>PacTec Drawing No. 2077-500SNP (TRUPACT-II SAR Drawing)</u>						
		IIIg No. 2077-3005NF (	TRUFACT-II SAR DIAWIII	<u>g)</u>	Rev. V		
İTEI	M DESCRIPTION:	Macana	) . sv. sv. sv. s Co. v. sv. v.				
1	Vacuum Crosses Short		PACKAGING COMPONENTS				
1.	<b>Vacuum Grease:</b> Sheet 1, F/N 15, Zone B-6/7/8; Sheet 1, F/N 38, Zone A-4/5/6						
2.	<b>Optional Stainless Steel Compatible Lubricant:</b> Sheet 6, Detail V, Option 1, Zone A-7; Sheet 6, Detail V, Option 2, Zone A-5; Sheet 6, Detail U, Zone C-6/7						
3.	<b>Nickel Bearing Lubricant:</b> Sheet 1, F/N 16, Zone B-6/7/8; Sheet 3, Detail E, Zone B/C-4/5; Sheet 3, Section F-F, Zone C-3; Sheet 4, Section G-G, Zone C/D-4; Sheet 4, Section H-H, Zone C-2; Sheet 5, Section BC-BC, Zone C-2						
4.	<b>Thread Locking Compound:</b> Sheet 1, F/N 17, Zone A/B-6/7/8; Sheet 3, Detail E, Zone B/C-4/5; Sheet 3, Section F-F, Zone C-3; Sheet 5, View AE-AE, Zone A/B-6; Sheet 5, Section BC-BC, Zone C-2; Sheet 6, Detail U, Zone C-7 and Zone C-6/7						
5.	<b>Epoxy Adhesive:</b> Sheet 1, F/N 32, Zone B-4/5/6; Sheet 4, Section G-G, Zone C/D-4/5; Sheet 4, Section H-H, Zone C-2/3						
6.	RTV Silicone Adhesive: Sheet 1, F/N 33, Zone B-4/5/6; Sheet 1, F/N 34, Zone B-4/5/6; Sheet 2, Detail B, Zone B/C/D-2/3; Sheet 3, Detail C, Zone C-7/8; Sheet 3, Detail D, Option 1, Zone D-7; Sheet 3, Detail E, Zone B/C-5; Sheet 3, Detail L, Zone B/C-5; Sheet 3, Detail M, Zone A/B-6; Sheet 3, Detail N, Zone A/B-5; Sheet 3, Detail P, Zone A/B-4; Sheet 4, Section G-G, Zone C/D-4/5; Sheet 4, Section H-H, Zone C/D-2/3; Sheet 5, Section AD-AD, Zone A/B-7/8; Sheet 5, Section AJ-AJ, Zone C-5; Sheet 5, Section K-K, Zone D-7; Sheet 5, Section Z-Z, Zone D-7; Sheet 6, Section AA-AA, Zone B-1/2/3/4; Sheet 6, Detail U, Zone C/D-6/7						
7.	Furane Adhesive: Sheet	6, "SPACER DETAIL"	, Zone D-3/4/5				
8.	<b>Optional Nickel Plating:</b> Sheet 1, F/N 53, Zone A-2/3/4; Sheet 7, Detail "ICV LOCKING RING", Zone B/C-3/4; Sheet 7, Detail "OCV LOCKING RING", Zone C/D-3/4						
9.	<b>Labeling:</b> Sheet 1, F/N 29, Zone C-4/5/6; Sheet 1, F/N 30, Zone B/C-4/5/6; Sheet 1, F/N 40, Zone A-3/4/5; Sheet 2, Detail "TRUPACT-II PACKAGING", Zone C/D-4/5/6; Sheet 3, View A-A, "ICV LID", Zone B/C-1/2; Sheet 4, View AS-AS, Zone B-6/7/8; Sheet 5, View AV-AV, Zone A/B-5/6; Sheet 6, View X-X, Zone C-1/2; Sheet 8, View AP-AP, Zone A-7/8						
Qu	ALITY CATEGORY:	☐ Category A	☐ Category B	□ Category	С		
Bas	sis:						
mar		mponents would not rel	or component lubrication, ease radioactive material f				
Crit	tical Characteristics:	CMTR (chemical	s and physicals)	Other (state be	elow):		

Preparer
Date

11.19.04

Date

Cognizant Manager

Date

Date

Date

OA Representative

Date

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System No.	PT01	Doc	cument No.	PE-04-0001	Rev.	0	

## MISCELLANEOUS PACKAGING COMPONENTS

- 1. Vacuum Grease: Any commercially available vacuum grease. Supply material with documentation containing material compliance.
- **2. Optional Stainless Steel Compatible Lubricant:** Any commercially available stainless steel compatible lubricant. Supply material with documentation containing material compliance.
- **3. Nickel Bearing Lubricant:** Any commercially available nickel bearing lubricant. Supply material with documentation containing material compliance.
- **4. Thread-Locking Compound:** Any commercially available thread-locking compound. Supply material with documentation containing material compliance.
- **5. Epoxy Adhesive:** Any commercially available epoxy adhesive. Supply material with documentation containing material compliance.
- **6. RTV Silicone Adhesive:** Any commercially available silicone adhesive. Supply material with documentation containing material compliance.
- 7. Furane Adhesive: Adhesive per Furane Epocast® Product No. 1617-A/B (Ciba-Geigy Corporation, Furane Aerospace Products, Formulated Systems Group, Los Angeles, California), or equivalent. Supply material with documentation containing material compliance.
- **8. Optional Nickel Plating:** Any commercially available electroless nickel plating. Supply material with documentation containing material compliance.
- **9. Labeling:** Any commercially available labeling process. Supply material with documentation containing material compliance.

COMMERCIAL GRADE DEDICATION: (SUMMARIZE CHARACTERISTICS)

N/A